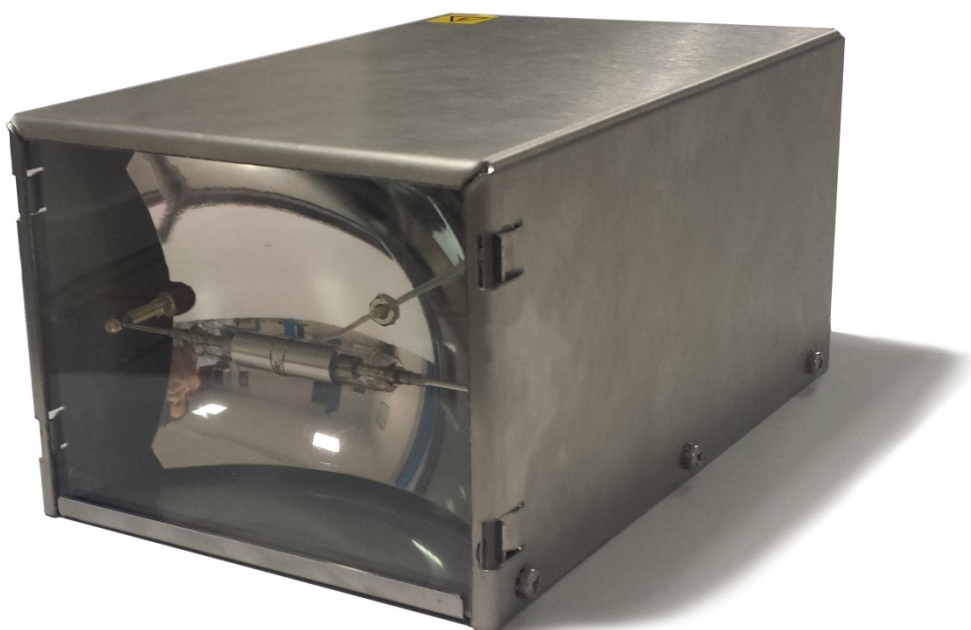


FLASH-UNIT FOR TRAFFIC CONTROL and HIGH-QUALITY PHOTO/VIDEO IMAGING



FX-1

OPERATING INSTRUCTION

Rev. D

Fev. 2017

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1.SAFETY INSTRUCTIONS

1.1. Safety Warning

This device stores up to 600 Joule energy in high voltage capacitors charged at almost 300 V. The "FX" Xenon Flash Illuminators must be considered as components as if their high voltage parts were not protected. They must be placed in an extra housing preventing any access, stress on the glass, as well as water or mist intrusion.

Furthermore, due to the extreme high power of light emission, operators and people in sight of the flash must be protected against direct impact of the light output and against the occasional explosion of the lamp. Although a flashlamp explosion rarely occurs, it can occur without prior notice.

The external supply must be a safe supply block generating no risk of electrical shock.

Before opening the housing, or gaining access to the inner circuitry, disconnect the supply, and wait for minimum 4 hours to let the voltage across the capacitors fall below 48 V. Once the housing open, the capacitors must be further discharges, see "Maintenance instructions" paragraph



Any other utilisation of the FX that is not described in the following document can lead to a dangerous situation



In case of unexpected behaviour of the product, the power supply must be cut off by removing the connector J1

1.2. SAFETY ICON



Disposal of Electrical and Electronic Equipment in Private Households In the European Union, Norway, Iceland and Liechtenstein:

This symbol on the product indicates that this product shall not be treated as household waste. Instead it should be taken to an applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.



Continuous Current :

This symbol on the product indicates that this product shall be powered with continuous current.



Risk of Electrical Shock :

This symbol on the product indicates that dangerous voltages are generated by the product and can be dangerous for human without precaution.



Warning:

This symbol on the product or the manual indicates that particular attention must be taken.



Read the Manual

This symbol on the product indicates that the manual shall be read before any operation.

2.PRODUCT DESCRIPTION

The FX Xenon Flash Illuminator is a device able to produce short impulses of light for photography by night and day

2.1. Specifications

Power supply

Input Voltage: 12V
Supply current: 5.5A

Physical characteristics

Dimension: see Dimension paragraph
Weight: 2.5 Kg

Product characteristics:

Lamp lifespan: 300 000 shots
Consumption: 70W peak / 2W in stand-by

Environmental condition

Operating temperature range: -20°C to +55°C Ambient temperature
The operating temperature depends of the cooling of the case. In continuous flashing the case shall not exceed 60°C

Operating relative humidity: 0 to 95% (non condensing)
Operating altitude range: < 2000m
Maximum pollution degree: 2
Over voltage category: <71V

2.2. Dimensions

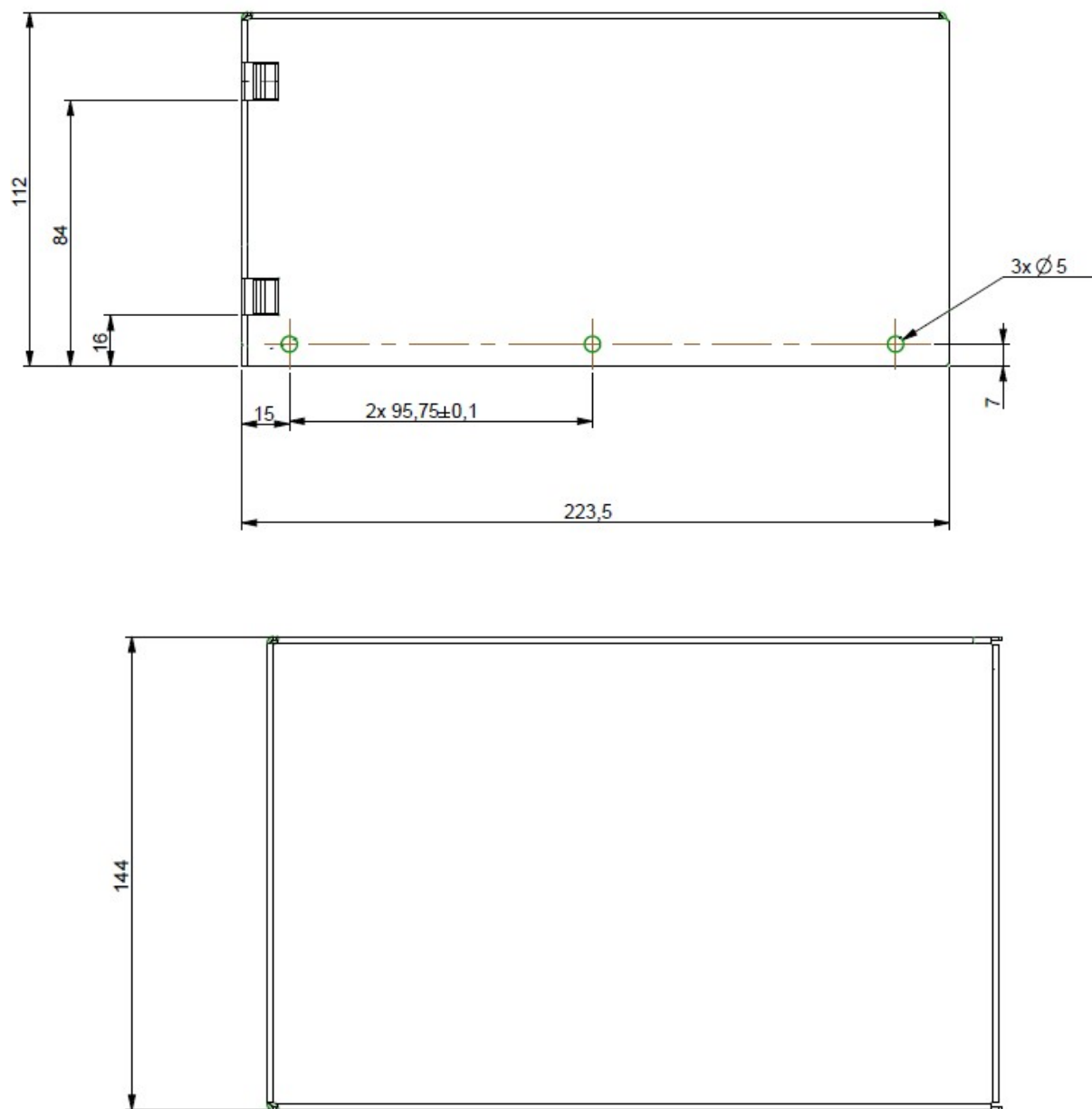


Figure 1

Fastening :

Production fastening must be ensure by the two M4 holes at the bottom of the product

3.CONNECTION



J1: Power and triggering interface :

Mating connector: SUB D9 Female connector

PIN	NAME	DESCRIPTION
1	+12V	Power supply (12VDC)
2	+12V	Power supply (12VDC)
3	Dry Contact	Dry contact Trigger 1 input
4	Trigger 1	CMOS Trigger 1 input
5	Trigger 2	CMOS Trigger 2 input
6	GND	Power supply (GND)
7	GND	Power supply (GND)
8	Flash Ready	Flash Ready output (Open drain)
9	Flash Fired	Flash Fired output (Open drain)



Dry contact and trigger 1 should not be connected simultaneously.

J2 : Communication interface (option):

Mating connector: SUB D15 Female connector

PIN	NAME	DESCRIPTION
1	GND	Power supply (GND)
2	HEXA 0	Hexadecimal CMOS input for energy level

3	HEXA 1	Hexadecimal CMOS input for energy level
4	OUTPUT_TRIG	Output Trigger
5	GND	Power supply (GND)
6	RS485-B	RS485-Communication (-)
7	RS485-A	RS485-Communication (+)
8	GND	Power supply (GND)
9	GND	Power supply (GND)
10	HEXA 2	Hexadecimal CMOS input for energy level
11	HEXA 3	Hexadecimal CMOS input for energy level
12	SPARE 2	Reserved for futur used
13	RS232 RX	RS232 Communication RX
14	RS232 TX	RS232 Communication TX
15	GND	Power supply (GND)

BP1 : Trigger Button :

Simulate a dry contact trigger.

If Trigger 1 signal is connected then the Trigger Button is not operational.

LEDS:

N°	Color	DESCRIPTION
1	Yellow	Product is supplied by power input
2	Green	Product is ready to produce a Flash
3	Red	Flash error : Last flash was not fired

Back Panel Switch (option):

The following table show the rated energy for each position of the switch:

Energy	Level
60J	0
10J	1
15J	2
20J	3
25J	4
30J	5
35J	6
40J	7
45J	8
50J	9
55J	10(A)
60J	11(B)
65J	12(C)
70J	13(D)
75J	14(E)
80J	15(F)

4.ELECTRICAL CHARACTERISTIC

Parameter	Note	Min	Typ	Max
Power supply voltage		9V	12V	16V
CMOS input threshold voltage	Internal 10k pull-down to GND	1V		16V
Dry contact threshold voltage	Internal 10k pull-up to VCC			0,5V
Trigger propagation delay				100 us
Open drain output current capability				20 mA
Open drain output voltage				16V

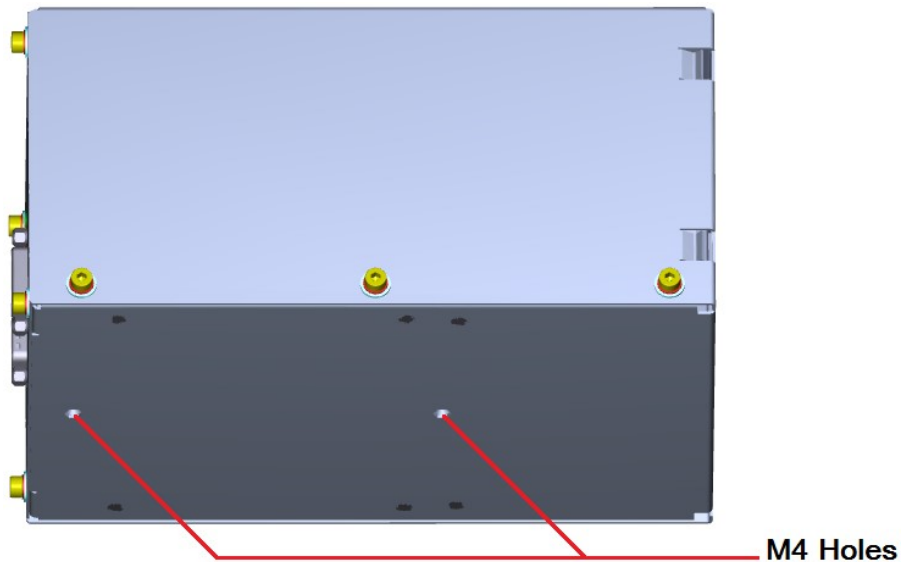
5. QUICK START

- Supply 12 V through J1 interface; power required: 66W.
- For cold start: wait for the green indicator to be "ON"
- Trigger flash pulses by short-circuiting Dry Contact signal of interface J1 or by pushing the BP1 button.

6.PRODUCT INSTALLATION

6.1. Fastening

The Flash must be fastened by it two M4 holes located at the bottom of the product



6.2. Cooling

The product must be enough cooled to avoid the case temperature to exceed 60°C. The cooling need depends of the flash repetition rate:

- Permanent flash : 25W dissipated by the flash
- Intermittent flash (less than 1/min) : 2,5W dissipated by the flash

7. MAINTENANCE INSTRUCTIONS



All the following instruction must be operated by High Voltage qualified and trained personnel only

7.1. Housing opening:



Before opening the housing, reduce the capacitors' charge according to the "safety warning" paragraph.

Then remove the 6 screws (see fig 4) on the sides, and the two screws on the rear side of the product. After remove carefully the case by the upper side.

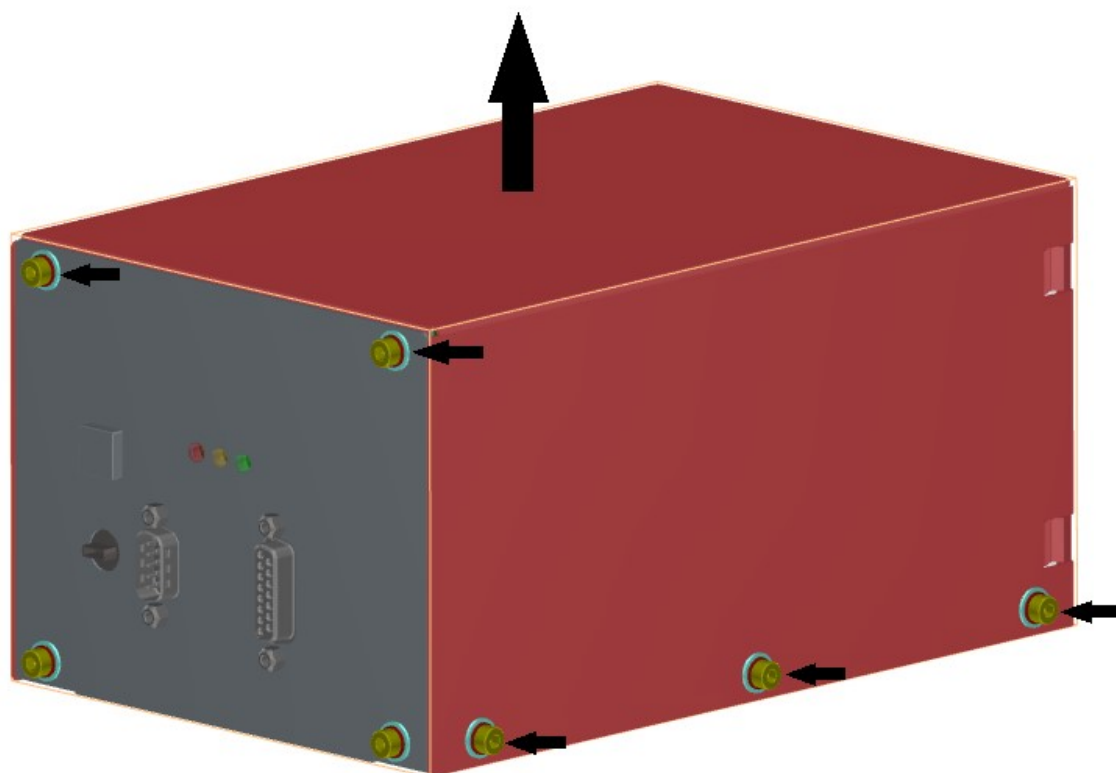


Figure 2

Discharge the capacitor with a 2.2 kOhm 50 W resistor between positive and negative contacts (see fig. 5), and check that the voltage between positive and negative contacts is below 1V

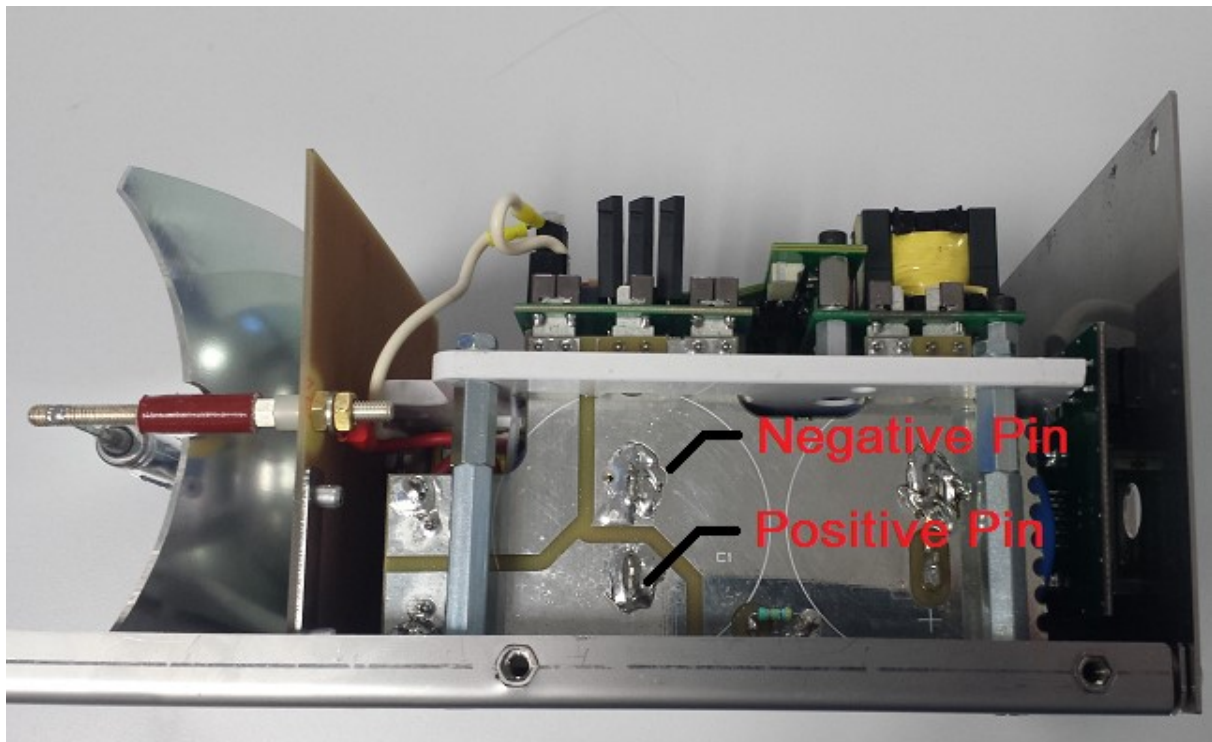


Figure 3

7.2. Lamp replacement:



This operation must be done only when capacitor is totally discharge and when the housing is opened.

Notice the connection of the trigger, and make sure to see the fixed PTFE tube (3 mm diameter), the fixed trigger wire, the fixed loop and the trigger wire of the lamp. The fixed loop must stay in place. Only the trigger wire of the lamp should be handled.

Remove the old lamp by pulling it by both ends. This will also withdraw the trigger wire of the lamp, from the fixed glass tube.

Position the new lamp in front of its connectors, slip its trigger wire into the fixed glass tube, insert totally the lamp. Both trigger wires now lie side by side in the fixed glass tube. That's enough for the high voltage impulse (10 kV), under only a few mA.

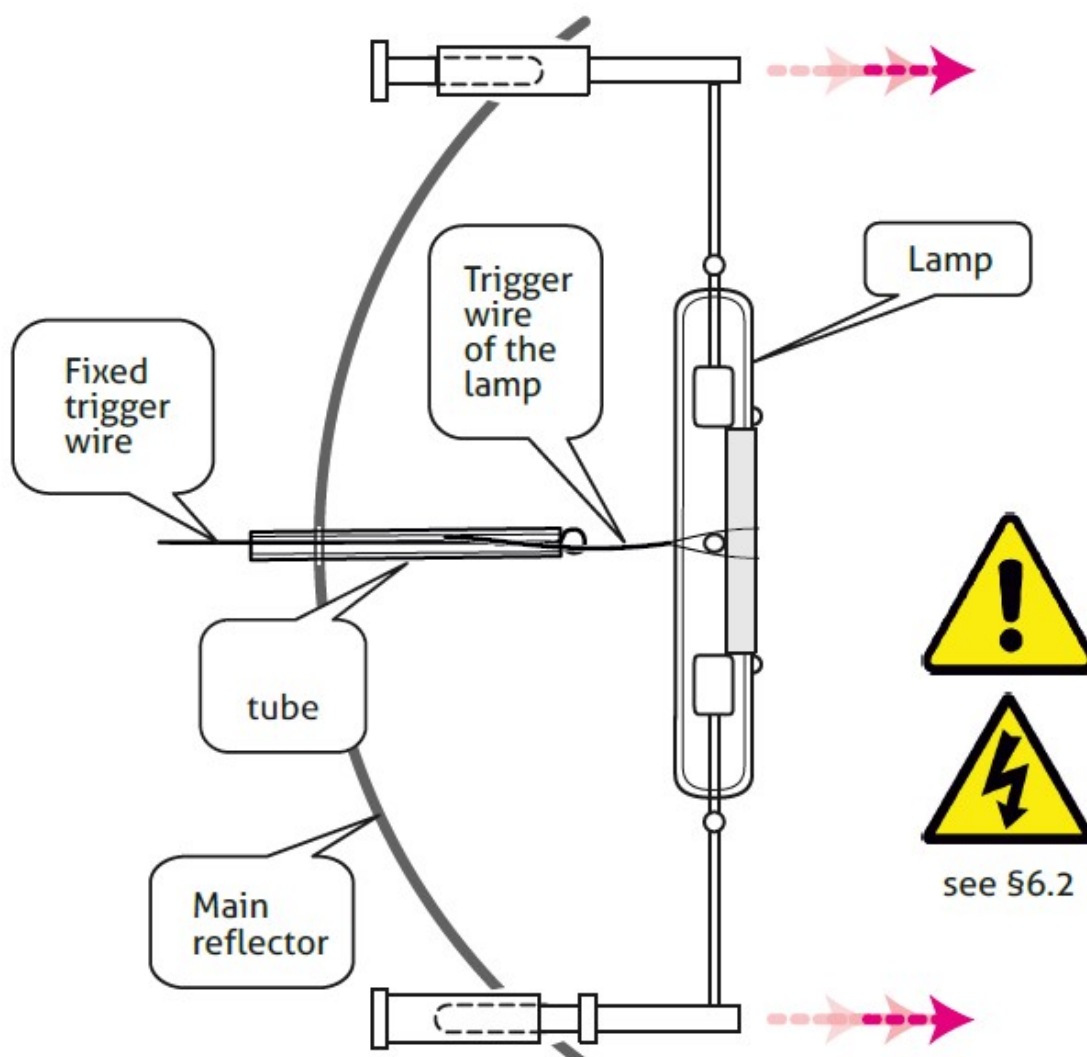


Figure 4

7.3. Fuse replacement:

This product is equipped with 2 fuses; **their replacement must be done by Phoxene at warehouse.**

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