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ELB 500 TTL

Service Manual



ELB 500 TTL (10232.1)

+ Battery ELB 500 (19297)



ELB 500 Head (20190)



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1. SAFETY NOTICE



The interior of the Elinchrom devices contain components carrying dangerous levels of electric charge, even though the unit has been disconnected from the mains or without supply battery. **Before all servicing operations or repairs, you must execute the following discharge process:**

ELB 500 TTL DISCHARGE PROCESS BEFORE SERVICING

<p>Activate the Service Menu</p> <ul style="list-style-type: none"> a) Unit must be ON b) Press together buttons Left, Right and Outlet B buttons 	
<p>Service menu is now activated</p>	
<p>Discharge unit</p> <ul style="list-style-type: none"> a) Select "HV Discharge" b) Press "Start" <i>Automatic discharge in progress...</i> c) Wait until automatic Shutdown d) Remove the battery from the unit. 	

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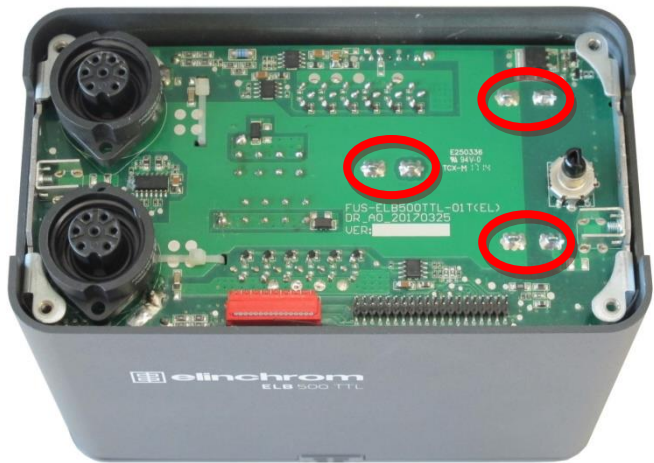
1. Remove the Front Panel

Info: To remove the Front Panel, remove the main rotary knob and the four corner screws under the plastic screw-cover.



2. Check the voltage on the three flash capacitors

The voltage of each capacitors must be under 50VDC



3. Unit discharged and secured

Now you can repair and servicing safely.



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2. SPARE PARTS

All available spare parts are displayed in the Elinchrom Web Shop in our Distributors Center www.elinchrom.com/agent

10232		ELB 500 TTL			
	Ref. #	Description	CHF	Min. Qty Package	Order
	10232.1	ELB 500 TTL without battery		1PCE	
	19297	Battery ELB 500 TTL Li-Ion 14.4V-5Ah		1PCE	
	19277	ELB 500 TTL Charger 14.4V Li-ion battery charger with mains adapters.		1PCE	
	230.032	Front Panel ELB 500		1PCE	
	230.401	Screw Cover Front Panel ELB 500		100PCE	
	230.033	Caps for Socket A		10PCE	
	230.034	Caps for Socket B		10PCE	

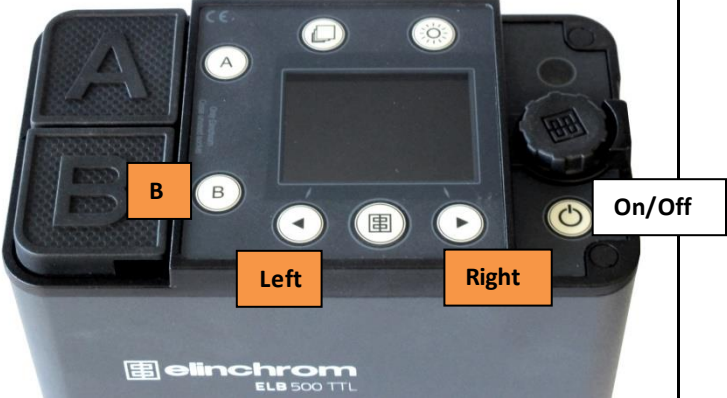
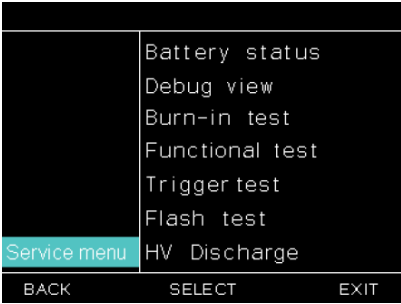
All available and no longer available spare parts are displayed in the “Spare Parts List” of the Technical Center in our Distributors Center www.elinchrom.com/agent

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3. SERVICE MENU

3.1. Activate Service Menu

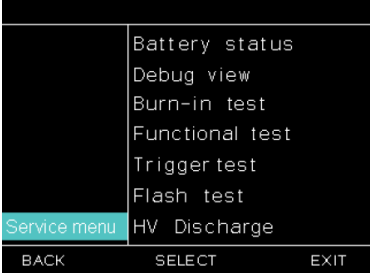

<p>Activate the Service Menu</p> <ul style="list-style-type: none"> c) Unit must be ON d) Press together buttons Left, Right and Outlet B buttons 	
<p>Service menu is now activated</p>	

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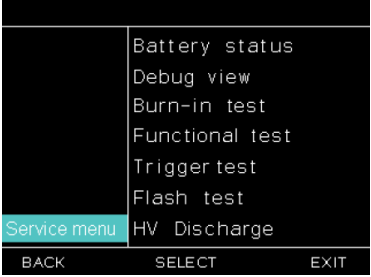
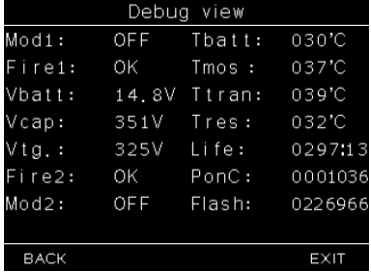
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3.2. Menus overview

3.2.1. Battery status

<p>Select "Battery status" in the service menu</p>	
<p>Battery status</p> <p>Vbatt: [Battery voltage [V]] Tbatt: [Battery temperature [°C]]</p>	

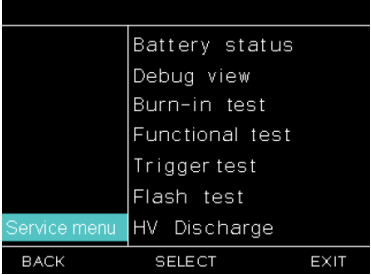
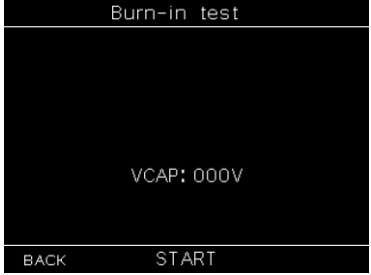
3.2.1. Debug view

<p>Select "Debug view" in the service menu</p>	
<p>Debug view</p> <p>Mod1: [Modelling lamp output A] Fire1: [Output A] Vbatt: [Battery voltage [V]] Vcap: [Flash capacitors voltage [V]] Vtg.: [Trigger voltage [V]] Fire2: [Output B] Mod2: [Modelling lamp output B] Tbatt: [Battery temperature [°C] inside battery] Tmos: [MOS FET temperature [°C] R95 on power board] Ttran: [Transformer temperature [°C] T1 on power board] Tres: [Discharge resistor temperature [°C] on flashboard] Life: [Lifetime of the unit] PonC: [Power ON counter] Flash: [Flash counter of the unit]</p>	

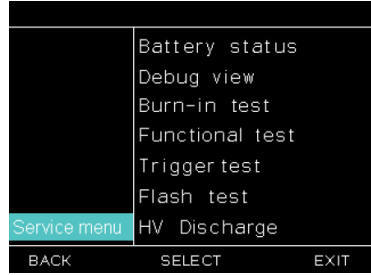
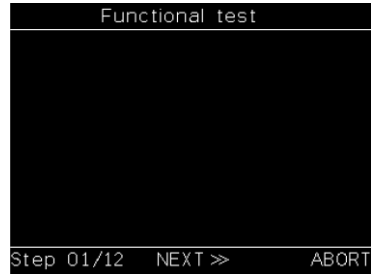
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3.2.2. Burn-in test

<p>Select "Burn-in" in the service menu</p>	
<p>Burn-in test (4 hours)</p> <p>If necessary, wait until VCAP is below 91V Press "START"</p> <p>Step 1/4 [30 minutes at 90V VCAP] Step 2/4 [60 minutes at 180V VCAP] Step 3/4 [60 minutes at 270V VCAP] Step 4/4 [90 minutes at 350V VCAP]</p>	

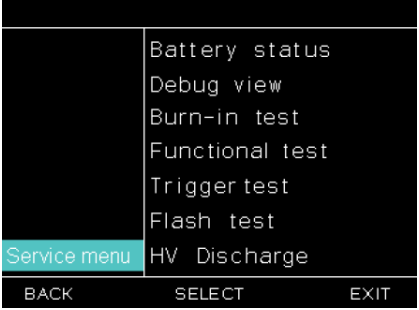
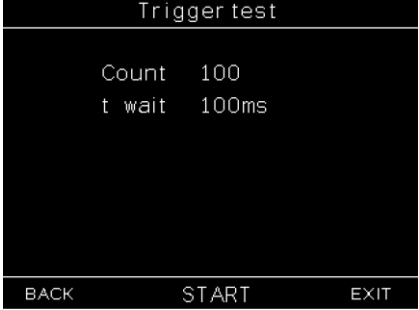
3.2.3. Functional test

<p>Select "Functional test" in the service menu</p>	
<p>Functional test</p> <p>Step 01/11 Black screen (All LED off) Step 02/11 White screen (All LED on) Step 03/11 Ready LED ON (Off-White-Green-Red) Step 04/11 Press outlet A button Step 05/11 Press outlet B button Step 06/11 Press Mod.lamp button Step 07/11 Press Left button Step 08/11 Press Right button Step 09/11 Wait Photocell Triggering (flash the cell) Step 10/11 Wait Synchro Triggering (Synchro socket) Step 11/11 Wait Radio Triggering (Skyport – Group All, F1)</p>	

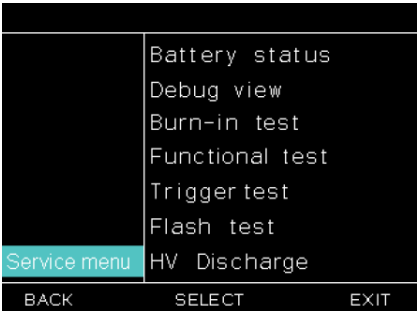
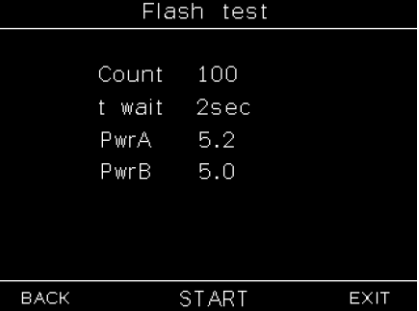
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3.2.4. Trigger test

Select "Trigger test" in the service menu	 <p>The screenshot shows a menu with the following items: Battery status, Debug view, Burn-in test, Functional test, Trigger test (highlighted), Flash test, and HV Discharge. At the bottom, there are three buttons: BACK, SELECT, and EXIT.</p>
Trigger test Count [Choose the number of flashes] t wait [Choose the time [ms] between triggers]	 <p>The screenshot shows the 'Trigger test' configuration screen with the following settings: Count 100, t wait 100ms. At the bottom, there are three buttons: BACK, START, and EXIT.</p>

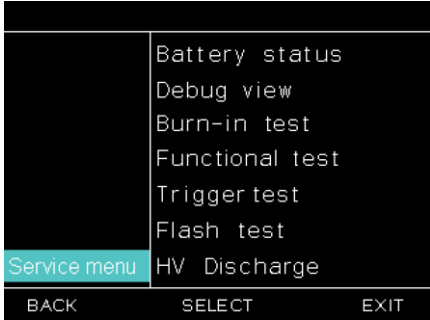
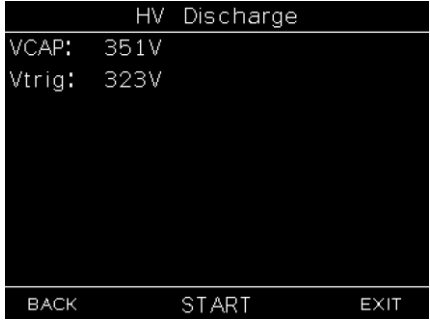
3.2.5. Flash test

Select "flash test" in the service menu	 <p>The screenshot shows a menu with the following items: Battery status, Debug view, Burn-in test, Functional test, Trigger test, Flash test (highlighted), and HV Discharge. At the bottom, there are three buttons: BACK, SELECT, and EXIT.</p>
Flash test Count [Choose the number of flashes] t wait [Choose the time [ms] between flashes] PwrA [Choose the Power [f-stop] of flashes of socket A] PwrB [Choose the Power [f-stop] of flashes of socket B]	 <p>The screenshot shows the 'Flash test' configuration screen with the following settings: Count 100, t wait 2sec, PwrA 5.2, PwrB 5.0. At the bottom, there are three buttons: BACK, START, and EXIT.</p>

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3.2.6. Discharge unit

<p>Select "HV Discharge" in the service menu</p>	 <p>The screenshot shows a menu with the following options: Battery status, Debug view, Burn-in test, Functional test, Trigger test, Flash test, and HV Discharge. The 'Service menu' label is highlighted in cyan on the left, and 'HV Discharge' is highlighted in white on the right. At the bottom, there are three buttons: BACK, SELECT, and EXIT.</p>
<p>Discharge unit</p> <ol style="list-style-type: none"> Select "HV Discharge" Press "Start" <i>Automatic discharge in progress...</i> Wait until automatic Shutdown Remove the battery from the unit. 	 <p>The screenshot shows the 'HV Discharge' screen with the following text: HV Discharge, VCAP: 351V, and Vtrig: 323V. At the bottom, there are three buttons: BACK, START, and EXIT.</p>

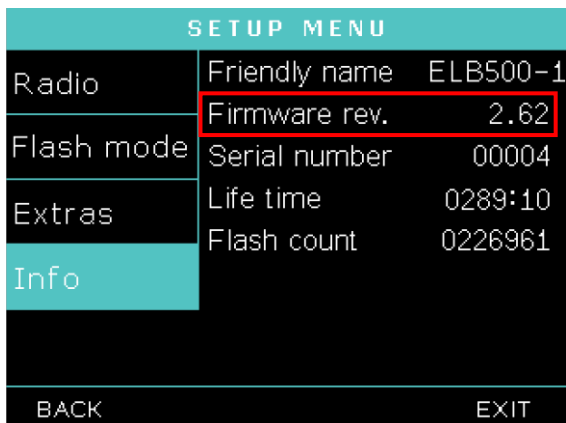
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4. FIRMWARE

4.1. Release

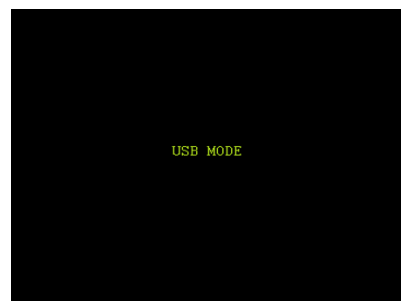
ELB 500 TTL firmware version could be displayed in the Setup Menu > Info



4.1. Firmware Update

ELB 500 TTL firmware update could be done with the software Elinchrom Updater and a micro USB cable.

Connect the ELB 500 TTL to your computer with the micro USB cable.



Start the Elinchrom Updater software. Follow the instructions of the Elinchrom Updater software.



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5. REPAIR ASSISTANCE

5.1. Error management

The following table describes the possible errors, which could be shown on the display if the unit micro controller detects them:

Error number	Description	Solution for user (User manual)	Solution for Service
1	Capacitors over voltage	Restart after 2 min. -> Service	<ol style="list-style-type: none"> 1. Try to replace first, the Power board 230.038 2. If the problem isn't solved, replace the Keyboard 230.032
4	Charge Timeout	Restart after 2 min. -> Service	<ol style="list-style-type: none"> 1. Try to replace first, the Power board 230.038 2. If the problem isn't solved, replace the Keyboard 230.032
6	Unstable voltage (Charge hold error)	Restart after 2 min. -> Service	<ol style="list-style-type: none"> 1. Try to replace first, the Power board 230.038 2. If the problem isn't solved, replace the Flashboard 230.037
13	Battery current fault (battery current overtime)	Restart after 2 min. -> Service	Replace the Power board 230.038
18	Discharge circuit error (Discharge resistor on the Flash board 230.037 is overtemperature)	-	Try to replace first, the Flash board 230.037 and check also the connection wire between the Flashboard and the Power board
31	Ignition voltage error	Restart after 2 min. -> Service	<ol style="list-style-type: none"> 1. Try to replace first, the Flash board 230.037 2. If the problem isn't solved, replace the Power board 230.038

5.1. Failures management

Failure Description	Solution for Service
Flash light always at max power	Replace Flashboard 230.037 . This issue is due to a short circuited IGBT (Flash cutting)
Battery shutdown	This is not a failure, but when the temperature of the battery is too high, the thermal security of the battery is activated. You have to wait the cooling of the battery. You cannot charge a battery in thermal security mode, the charger will be in status green, but the battery is not necessary charged.
Skyport disturbances	Replace the Front Panel ELB 500 230.032
Photocell defective	Replace the Front Panel ELB 500 230.032
Keyboard touch defective	Replace the Front Panel ELB 500 230.032
No Trigger	<ol style="list-style-type: none"> 1. Try to replace first, the Power board 230.038 2. If the problem isn't solved, replace the Flashboard 230.037
No modelling LED	<ol style="list-style-type: none"> 1. Replace the Reflector LED 26766 2. If the problem isn't solved, replace the Flashboard 230.037
Heads not detected	<ol style="list-style-type: none"> 1. Try to replace first, the Flash board 230.037 2. If the problem isn't solved, replace the Front Panel 230.032

6. KNOWN PROBLEMS

All known problems have a corresponding Technical Note available in the online **Technical Centre**.