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broncolor
THE LIGHT

Bedienungsanleitung
Operating Instructions
Mode d'emploi
Istruzioni per l'uso
Manual de Instrucciones
Gebruiksaanwijzing

broncolor®
broncolor *primo*
broncolor *primo A*
broncolor *primo 4*

www.broncolor.com

Operating Instructions broncolor

Primo / Primo A / Primo 4

Contents page

Important: Read before startup

- Prior to replacing fuses, light bulbs or flash tubes, discharge the power pack and disconnect from power supply. Disconnect the lamp base from the power pack.

- Only those types of fuses indicated on the fuse label should be used. This is particularly important when using the halogen lamp which may explode if the wrong fuse is used.

- Only sand-filled fuses should be used. Sand-filled fuses can be identified by the opaque body of the fuse.

- These units are designed for use in dry conditions. Protect them from water and from excessive exposure to dust.

- The units are not suitable for use in an environment where there is a risk of explosions.

- The accessories mounted onto the lamp bases may heat up to high temperatures under specific conditions. Handle with care!

- With due allowance for heat radiation, lamp bases with more than 100 W modelling light may be directed against inflammable surfaces only at a minimum distance of 1 m.

- For safety reasons, never operate the lamps/compact units without the protecting glass in place.

- Flash light contains, similar to sunlight, a specific portion of UV light. The undesirable side effects on skin and eyes are considerably reduced by using flash tubes and glass covers with a UV coating. Without these or other protective filters, use with extreme care when shooting.

- Even when disconnected from the power supply, dangerous voltages may remain inside the unit. For this reason units should be opened by trained personnel only.

- **broncolor** power packs and lamp bases meet an extremely high safety standard. When connecting **broncolor** products to other manufacturers' products, integrated safety measures may become ineffective. Due to different design features and contact assignment of the lamp plugs of other makes, the user himself may even be at risk. We offer no guarantee or liability for damages which may be caused by this type of usage.

Controls and displays

1 Rotary knob for power control of flash and modelling light

2 Rotary knob for modelling light
(Primo/A: full, p3. p2 and off)
(Primo 4: full, p1, p2 and off)

3 Slave cell switch

4 Slave cell

5 Switch for slow charging

6 Slow charging display

7 Switch for ready signal (buzz)

8 Jack for synchronous cable

9 Flash ready and slave cell signal green

10 Charge and alarm signal red

11 Test flash key

12 Mains switch

13 Voltage switch 110 V/220 V (only in the switchable version)

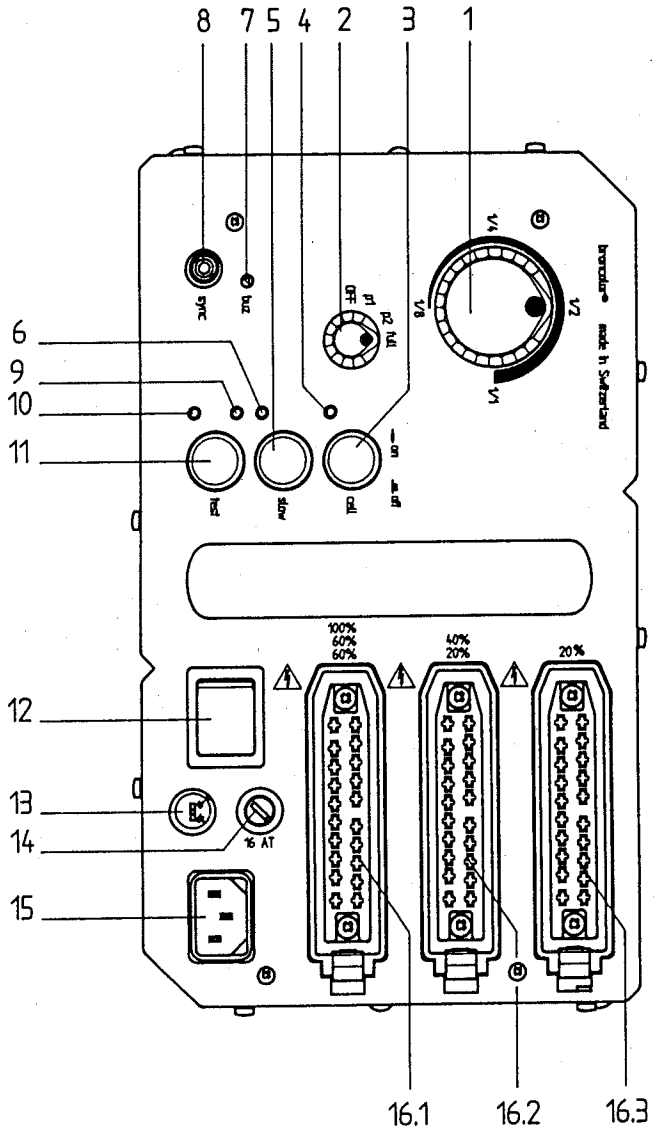
14 Fuse

15 Connection socket for mains cable

16.1 Lamp base jack 1

16.2 Lamp base jack 2

16.3 Lamp base jack 3



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1. Commissioning

1.1 Mains voltage / voltage selector (only in switchable version)

Information on mains voltage is listed on the rating plate on the base of the unit. Set the unit on the required mains voltage (100-120 V/200-240 V) by turning voltage switch (13) with a coin or screwdriver.

1.2 Grounded network

Connect unit to power network always using grounded mains plug.

1.3 Startup

Use the mains switch to power-up unit. During the charging action the red display charge signal (10) flashes. The green ready signal (9) then either burns continuously (photocell "on") or flashes (photocell "off").

1.4 Set modelling light to intended mode of operation using rotary knob (2).

1.5 Set intended flash output via rotary knob (1)

1.6 Release test flash by pressing key (11)

1.7 Switch slave cell on or off by using key (3)

1.8 If needed, plug synchronous cable into jack (8)

1.9 The audible ready signal can, if not needed, be switched off by turning a small screwdriver in the aperture (7).

2. Energy control

2.1 Primo / Primo A / Primo 4

Set intended flash output using rotary knob (1). The power pack automatically discharges excess energy when power output is reduced, red charge signal (10) blinks.

2.2 Primo A

Primo A power packs have an asymmetrical power distribution. The set flash energy (1) is distributed through the chosen lamp connections (16.1, 16.2, 16.3) according the following chart:

Amount of pluged in lampheads	Lamp base jack I (16.1)	II (16.2)	III (16.3)
1 lamphead	100 %	-	-
	-	40 %	-
	-	-	40 %
2 lampheads	60 %	40 %	-
	-	20 %	20 %
	60 %	-	40 %
3 lampheads	60 %	20 %	20 %

The percentage indications relate to the flash power set with the rotary knob (1).

3. Lamp bases

Newly connected lamp bases are activated automatically. The lamp and accessories assortment of Primo and Pulso 2/4 system may be used without restriction.

3.1 Replacing of flash tubes

Prior to any change of the flash tube, the lamp base must be disconnected from the power pack!

Primo and Pulso lamp bases use plug-in flash tubes. To replace the flash tubes of Primo lampheads, the contact spring has to be released to allow the tube to be removed. A protecting glass fits over the flash tube and modelling lamp and is held in place by 3 springs. This is available in 3 versions, clear (5900K), UVE (5500K) and UV (5100K).

As the Primo lamp base can be used with a 1600 J as well as with a 3200 J tube, there is a corresponding warning sticker to it which is to be put on the lamp plug while inserting the tube.

On Pulso 4 and Primo 4 lamp bases, the UV coating is on the protecting glass; the flash tube for thermal reasons is clear. On Primo and Pulso 2 flash tubes, the UV coating is normally applied directly on the tube. Any glass cover used must be clear. Upon request, the Primo and Pulso 2 lamp bases can be supplied with a clear tube and a coated protecting glass.

To change the flash tube, carefully pull off the protecting glass. Pull straight, without tilting. Release the contact spring and again be sure to pull the flash tube straight along the lamp base axis. When inserting the tube check that the ceramic base is fully pushed back in and that the contact spring rests on the internal ignition wire.

Get an authorized servicing agency to exchange flash tubes in lamp units with fixed tubes (Boxlite, Fibrolite, etc.).

3.2 Changing the tungsten-halogen lamp

Depending on the voltage version, Primo and Pulso lamp bases use either plug-in or screw-in tungsten-halogen lamps. The 200-240 volt models use 650 watt pinbased lamps, the 100-120 volt models use 250 watt lamps with a screw base.

3.2.1 Primo lamphead

Both the voltage versions (110 V/220 V) after exchanging the tungsten-halogen lamp, can be run with the other voltage. The only difference is the modelling lamp socket which depends on the voltage used.

- 110 V version
  100-120 V 250 W halogen
  200-240 V 500 W halogen
  modelling lamp socket E11

- 220 V version
  200-240 V 650 W halogen
  100-120 V 300 W halogen
  modelling lamp socket 2 x 6,35

Only sand-filled fuses of the type indicated on the rating plate may be used; otherwise the halogen lamp may explode.

3.3 Cooling fan

A cooling fan in the lamp base cools the flash tube and modelling lamp. It also runs when the modelling lamp is turned off.

3.4 Thermal protection

The lamp bases have been fitted with an automatic thermal protection. Should the lamp base overheat (e.g. by impeding the flow of cooling air), the modelling light is shut off. Nevertheless you may continue producing flashes.

3.5 Lamp base plugs

The lamp base plugs and jacks carry mechanical interlocks to prevent inadvertent disconnection. To unplug, push down the locking spring below the cable guide and lift out the plug.

3.6 Reflectors

Primo and Pulso lamp bases have a bayonet fitting to take reflectors.

4. Modelling light

4.1 The modelling light of all connected lampheads can be switched on with rotary knob (2).

"off"	- modelling light off
"p1" (only Primo 4)	- This level allows matching of Primo 4 units to the proportional control of the Pulso 8.
"p2"	- This level allows matching of the Primo/Primo A units to the proportional control of the Opus 4/A4/A8 as well as Pulso 4/A4. "p2" is the brightest level with Primo 4, Opus 4/A4 as well as Pulso 4/A4.
"p3" (only Primo/A)	- Proportional modelling light - brightest level with Primo/Primo A, Opus 2/Opus A2 as well as Pulso 2/A2.
"full"	- All lamp bases with full modelling light, independent of flash output, type of power pack and power distribution.

Proportionality is guaranteed if the identical operating mode ("p2", "p3") has been set for all power packs.

4.2 Modelling light switch on lamp base

The modelling light may be controlled additionally with a switch on the lamp base. To avoid damage to the lamp filament, always switch off the modelling light before moving the lamp base.

5. Release

5.1 Slave cell

Operated by slave cell switch (3) [by "on" the green ready signal (9) burns continuously, by "off" it flashes].

5.2 Synchro jack

Synchronous cables art. no. 34.111.00 or 34.112.00 may be plugged into the jack to release flashes via cable.

5.3 Test flash key

This key (11) allows releasing the power pack manually as soon as 70% of the energy set is available.

6. **Flash ready signals** (for 100% of selected energy)

6.1 Visual ready signal

It is the green LED (9) which lights up or flashes when the unit is fully charged. After a flash this goes out and the red LED (10) blinks until the unit is fully charged.

6.2 Audible ready signal

The audible ready signal is heard as a "buzz". It can be switched on and off by turning a small screwdriver in the aperture (7).

6.3 Visual and audible fault signal

If the power pack is unable to charge up (e.g. because of overheating), the red LED (10) burns continuously and an audible warning signal of 3 seconds can be heard.

7. **Slow charging "slow"**

In case of weak mains supply, charging time may be extended using the "slow" mode. By briefly pressing the key (5), this function can be switched on and off. When the "slow" function is in use the red LED (6) lights up.

8. Technical data

	Primo Primo Bi-Voltage	Primo A Primo A Bi-Voltage	Primo 4 Primo 4 Bi-Voltage
Flash energy	1600 J	1600 J	3200 J
F-stop at distance of 2m 100 ISO, reflector P70	64 1/10	64 1/10	90 1/10
Flash duration t 0.1 (t 0.5)	1/230(1/700) 1 lamp 100% 1/390(1/1200) 2 lamps 60% 1/530(1/1700) 3 lamps 40%	1/230(1/700) 1/380(1/1200) 1/580(1/1750)	t 0.5 /1/260-1/630
Charging time(for 100% of selected energy)	1,1 s - 2,3 s	1,6 s - 3,9 s	
Ready signal	switchable to slow charging visual, audible (may be shut off)		
Lamp base connections	3	3	3
Power output			
distribution	symmetrical	asymmetrical	symmetrical
Control range	3 f-stops in calibrated 1/3 f-stops		
Modelling light	halogen max. 3 x 650 W by 200 - 240 V		
Flash release	halogen max. 3 x 300 W by 100 - 120 V (off, p1, p2, p3, full) slave cell, synchronous cable, manual key		
Stabilized flash			
Voltage	+/- 2%		
Interference suppressor	SEV, VDE N degree		
Power requirements	200-240 V 10A / 100-120 V 16 A		
Dimensions l x w x h	275 x 162 x 275 mm		305 x 162 x 275 mm
Weight	6,2 Kg/Bi-Voltage 6,5 kg		7 kg/Bi-Voltage 7.3 kg

Specifications subject to change in the interest of technical development.