Order nr. 32 40 07

PRO=5 MANUAL

Profoto AB. Box 2023. S-122 02 Stockholm-Enskede, Sweden

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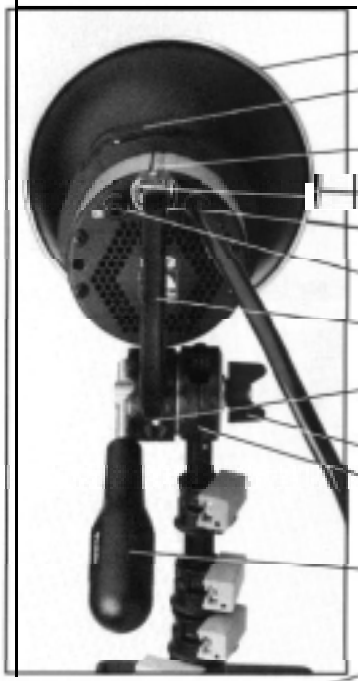

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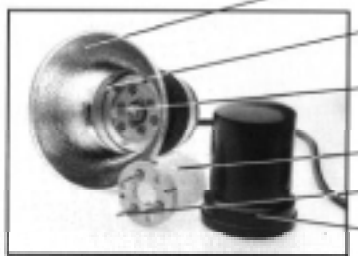

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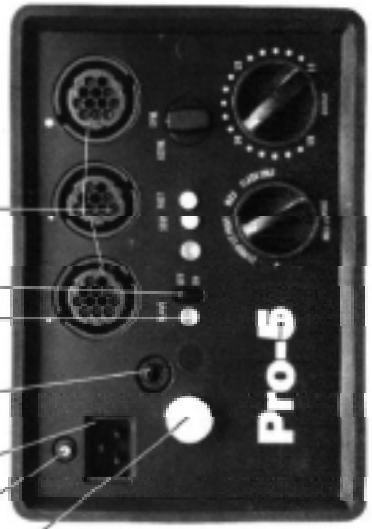

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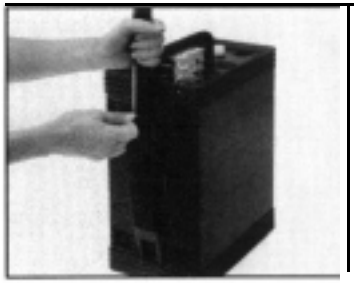
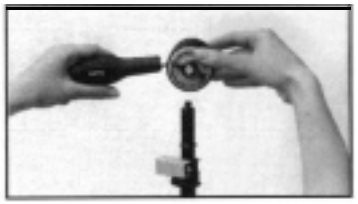


2. ASSEMBLY OF UNITCOMPONENTS

A. To mount the stand on the generator, lift the upper clamp on the stand fixture, then slip the stand through it and through the lower clamp as well. The stand will be locked in place when the upper clamp is released.

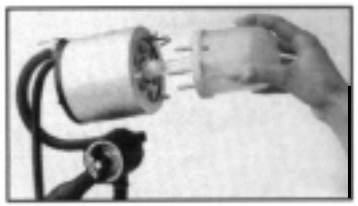


B. Slip the opening in the flash head pan-and-tilt device over the adapter, which is located on the end of the stand. If necessary, loosen the wing nut.

C. Tighten the wing nut, so that the locking lever can only be turned around with some difficulty.

D. To mount the flash head, open the latching lever on the rear and insert the lamphook into the square receptacle. Tighten the lock mechanism.

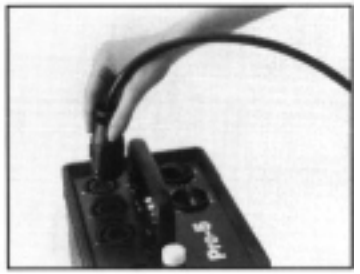
E. Screw the modelling lamp into the flash head screw base.
IMPORTANT: Do not touch the modelling lamp's surface with your fingers.



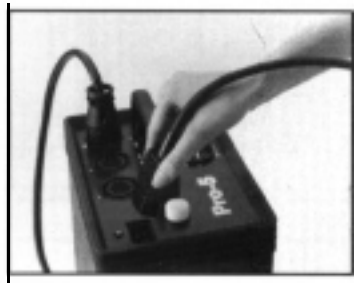
B. Insert the flashtube's three pins into the socket. Pull back the lock-spring to insert.

G. To mount the reflector, push it over the flash head and secure it in place. The reflector can be adjusted by referring to the numerical scale printed on the flash head and comparing it with the instructions for using the reflector.

H. Insert the lamp plug into the generator by matching the three white dots with each other, and secure it with the locking ring.



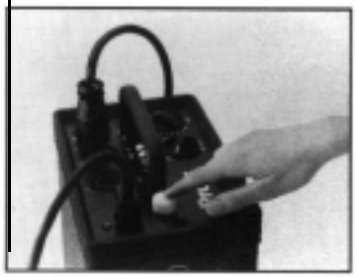
I. Plug the mains cable into the generator's mains socket. Then plug the other end into a grounded socket capable of handling at least 10 amps.



J. Turn the control dial for the modelling light from "0" to any other setting, so that the generator will begin to charge.

K. The ready lamp will light when the generator is fully charged. Charging takes a little longer if the unit has been dormant for a while. Make sure that the modelling light is working, and push the ready lamp/button to test the flash.

L. The unit is now ready for use. For further information, see the complete instruction manual.



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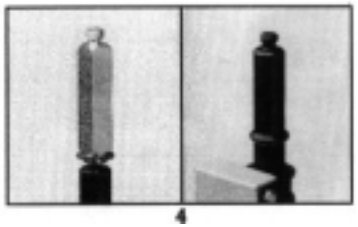

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3. THE STAND/STAND FIXTURE

The stand is a telescope model. By loosening the toggle clamps on each section, the stand's length can be altered. To adjust a clamp's friction, open the clamp and use the plastic tool (provided as standard equipment) to tighten the nut. To ensure stability, begin lengthening the stand by adjusting the lower sections first and proceeding upward to the top of the stand. The stand is secured in the stand fixture on the generator's short side with the help of an elastic band. To mount the stand, lift the upper clamp on the fixture and insert the stand through both the upper and lower clamps, which hold the stand in place. To dismount the stand, depress the lower clamp and draw the stand up and out.

4. THE STAND ADAPTER

The stand supplied with the Pro-3 has, as standard equipment, a round, 16 mm stand adapter. There is also a square 12 mm adapter for mounting the head on a boom. An extra 16 mm adapter is also provided for mounting on other stands. However, it must be mounted properly to be tight enough for use.

5. THE FLASH LAMP HEADS

The PF flash head comes complete with a f sable reflector, a modelling light (250 ,W Halogen), a flashtube (for 3000 J/Ws maximum), and a protective cap. In addition, the flash head is equipt with a thermostat-controlled fan for effective cooling. For continuous fan operation, use the recessed switch on the back side of the head.

There is an On/Off switch on the back of the flashhead that controls the modelling light, but does not effect the flashtube. The flash head's housing also shows a printed numerical scale that can be compared with a key in the reflector instructions, so that the right settings can be determined. The protective cap protects the flashtube and modelling light in transport.

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The Twin flash head is equipt with a 50 reflector, modelling light (500 W Halogene), 2 flashtubes (each 3000 J/Ws maximum), and a protective cap. Otherwise, the Twin flash head is in all respects the same as the PF. As additional equipment, the Twin has a Y-cable for attachment to TWO generators of 2400 J/Ws each, for a total of 4800 J/Ws The Twin flash head is standard equipment on the Pro-5/4800, and can provide the maximum energy, 4800 J/Ws.

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6. REFLECTOR

Fasten the reflector to the flash head by pushing it over the head's outer housing. Since the reflector is equipt with a clamp to keep it in place, the clamp must be opened whenever the reflector is mounted or dismounted. Each type of reflector comes with recommendations for application of the numerical scale on the lamp head, so that the desired results may be achieved. After securing the reflector in place mount the umbrella in the opening provided for it on the flash head.

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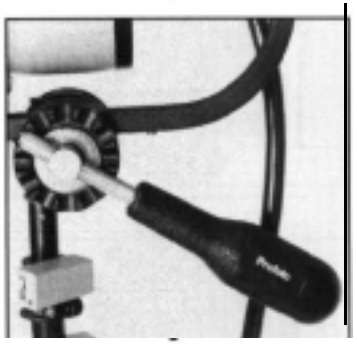

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7. THE PAN-AND-TILT DEVICE

The pan-and-tilt device makes it possible to adjust the flash head easily, either vertically or to the side, since it keeps the flash head in place by friction. Loosen the locking lever, turn the flash head in the desired direction, and tighten the locking lever once again. When mounting the flash head, it is important that the friction be adequate. This is achieved by adjusting the wing nut. It should not be so tight that the locking lever cannot function, nor should it be so loose that the flash head cannot be locked into place.

The pan-and-tilt device has a round hole for mounting a 16 mm (5/8 inch) stand adapter and a square hole for a 12 mm (1/2 inch) adapter.

IMPORTANT: Always loosen the locking lever before adjusting the flash head, otherwise the pan-and-tilt device will gradually lose its ability to stay locked.

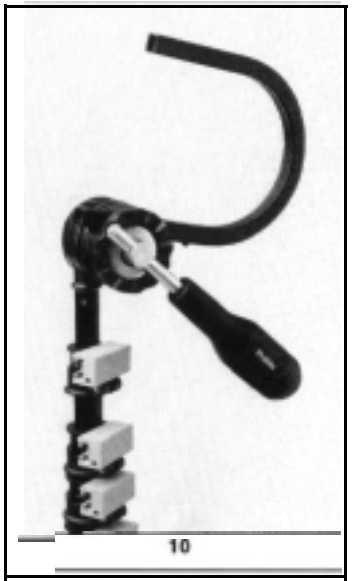
For proper function the stand adapter must be mounted on the side next to the wing nut.

8. THE LOCKING LEVER

The locking lever works as a handle for manipulating the flash head. It also makes it possible to lock and unlock the pan-and-tilt device. To change the angle of the lever, loosen the wing nut and move the lever to another groove in the pan-and-tilt device. If the lever locks too hard or too loose, adjust the wing nut. For best results, the locking lever should be able to be turned around only with some difficulty.

9. THE ATTACHMENT RECEPTACLE

On the back side of the flash head there is an attachment receptacle with a latching lever which connects the flash head to the lamp hook. The latching lever must be opened for mounting or dismounting, and it must always be closed when the flash head is mounted to prevent it from falling off the hook. There is a safety catch on the lock mechanism which prevents it from opening accidentally. The safety catch must be pulled back to permit the latching lever to be opened.



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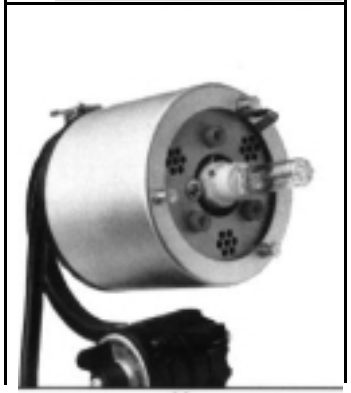
10. THE LAMP HOOK

The lamp hook joins the flash head with the pan-and-tilt device. To mount the lamp hook, first loosen the wing nut. You can then either take it off or put it in place by pressing the locking pin on the hook. When the lamp hook is in place, tighten the wing nut. Then insert the hook into the attachment receptacle on the flash head and close the latching lever. Normally, the flash head would be mounted with the attachment receptacle facing upward, thus providing the most compact assembly. However, when large diameter reflectors are to be used and tilted downward, the unit should be assembled with the flash head in the opposite position, e.g., with the attachment receptacle facing downward. In this way, the flash head extends further outward from the stand and provides greater freedom for downward tilting. The lamp hook can either be mounted upwards or to the side. If it is mounted sideways, it is possible to mount two lamp hooks (and flash heads) in the same pan-and-tilt device by turning the last disc section of the pan-and-tilt device 1/2 turn around.



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11. THE MODELLINGLAMP

The modelling lamp sits in the center of the flash head, mounted in a “mini-can” screw base. To change the modelling lamp, you must first dismount the flashtubes. A 25 o W modelling lamp is standard on the Pro-5 (500 W on the Twin flash heads). The maximum wattage of modelling lamp that can be connected to any one flash head

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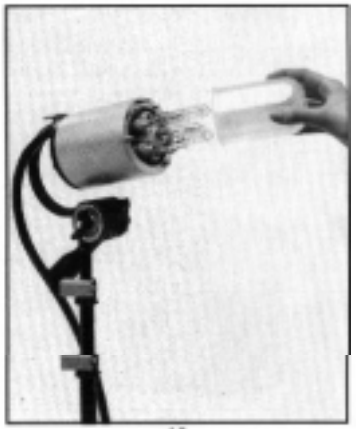

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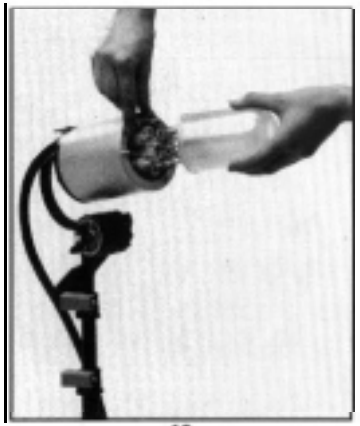

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outlet is 1000 W. The total modelling light wattage for the Pro-5 generator is 1100 W.

IMPORTANT: Always disconnect the flash head plug from the generator before changing either modelling lamps or flashtubes.

12. THE FLASHTUBE

The PF Flash Head: The flashtube is mounted in a protective, frosted glass cover on a ceramic base. The base has three metal pins for insertion into the flash head. These are placed asymmetrically, so that it is not possible to insert the flashtube incorrectly. The flashtube is secured to the head with a safety catch. When mounting or dismounting the flashtube, hold out the safety catch to let the flashtube socket pass. Care must be taken when mounting or changing the flashtube not to damage the modelling lamp.

The Twin Flash Head: The two flashtubes are mounted under a removable glass cover. When changing the flashtubes, dismount the glass cover by pressing together the two locking pins on the flash head, then lifting off the cover. The two flashtubes are mounted separately, each on its own ceramic base with metal pins, which permits the user to change the tubes independent of each other. After the glasscover has been removed, the modelling lamp can be changed in the standard manner.

13. MAINS CONNECTION

The Pro-5 is designed for AC connection only. It is an "all voltage" generator, which can be connected to the most common voltages: 90-130 V, 180-240 V, 50-60 Hz. The generator is connected to the mains by a special cable and switches itself into the correct input voltage range, thereby eliminating manual adjustments. The mains power lamp shines green when the generator is AC connected. The modelling lamp is specially trimmed for 100/200 V, 117/220 V or 117/240 V. When the generator is connected to operating voltages other than those specified, the modelling light may vary somewhat from its nominal intensity. However, re-trimming can be performed by any workshop authorized to service Profoto products.

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IMPORTANT: When the unit is not going to be used for a while the mains plug should be disconnected. This is necessary, so that automatic safety mechanism (pulse charging) can start up when the unit is put in use again. When the generator is pulse charging, or when initial charging is taking place, charging time can be considerably longer than normal (60 sec. or less). In extreme cases, it can take several minutes.

14. THE CIRCUIT BREAKER

The flash generator is equipt with an automatic circuit breaker which protects both the generator and the flash heads from overload. If overload occurs, the button controlling the fuse will protrude from the panel, signifying a warning. The fuse will regain its function when the button is pushed in again. Because the circuit breaker governs only the modelling light and has no effect on the flash, the flash can still be used with the fuse in "warning" position, but the modelling light will not function.

IMPORTANT: If the circuit breaker is in "warning" position, find the cause of the overload before returning the fuse to normal status.

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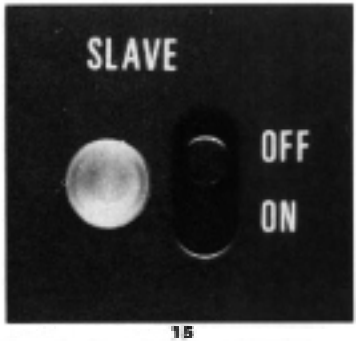

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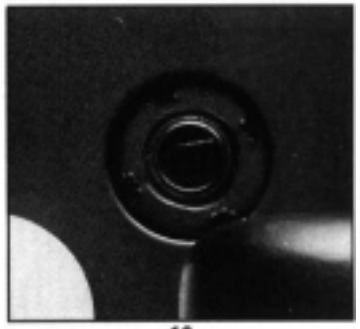
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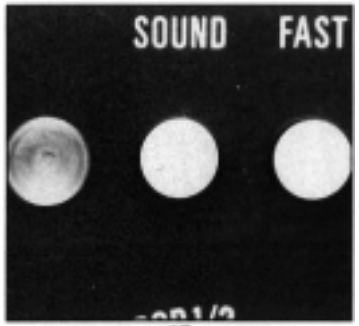

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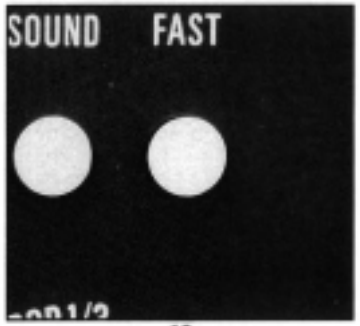

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15. IR-PHOTOCELL/SLAVE

The IR-Photocell on the generator panel serves as a flash trigger. It can be activated by another flash, or by an IR-sync attached to the camera's synchronization mechanism. The photocell can be turned off by flipping the switch located beside it on the generator. When a sync cable is in use however, the photocell is automatically disabled.

16. THE SYNC OUTLET

The sync outlet is connected directly to the camera by a cable. When the cable is connected, the generator's photocell ceases to function.

17. SOUND-CONTROL

The generator has an audible signal system to indicate when the generator is charged. When this signal is undesirable, simply release the button marked "SOUND".

16. FAST-CONTROL

Fast-Control effects the charging time. When the mains power supply is unpredictable or generally low, the FAST-Control can be utilized to allow slow charging of the generator, which demands less immediate mains power. This type of charging requires more time.

19. THE MAINS POWER LAMP

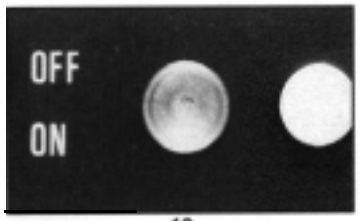
The mains power lamp shines green when the generator is connected to the mains.

20. THE READY LAMP

The ready lamp button has two functions. First, it lights up when the generator is fully charged. Second, it can be used to test flash capability ("open" flash). When it is pressed, the generator will release its charge.

21. SYNCHRONIZATION

Synchronization of the unit is achieved either directly from the camera via a sync cable connected to the sync outlet, or by means of the built-in IR-photocell triggered by a flash, or through a signal from an IR-sync attached to the camera. The built-in photocell does not function when the sync cable is in use, but it can also be turned off manually.



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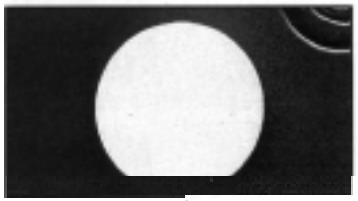
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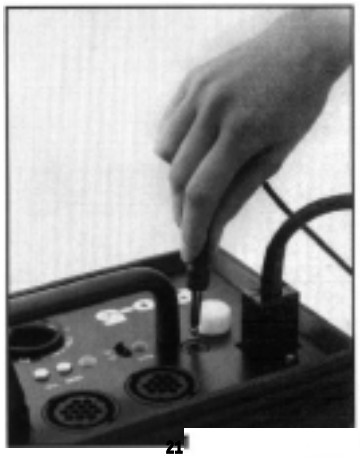
22. FLASH HEAD CONNECTION

When connecting the flash head plug, align the two white dots on the plug with the white dot on the generator panel next to the outlet. After connecting the plug, lock the connector into position by turning the locking ring on the plug clockwise. If not properly inserred, the flashtube will not trigger. The plug is especially designed for flash use and can be connected or disconnected at any time before, during or after charging.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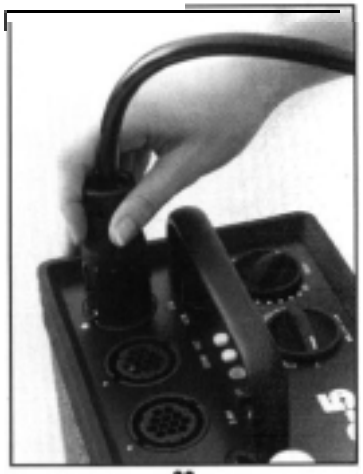
Regarding All Models: In the symmetrical energy distribution mode (SYM), the flash heads can be connected to any of the outlets. The designated energy is divided EVENLY between the connected flash heads, regardless of which outlet they are connected to. Thus, ONE flash head connected will receive 100% of the energy; TWO flash heads will receive 50% of the energy each; THREE flash heads will each receive 333 %.

Regarding "A" Models: In the asymmetrical energy distribution mode (ASYM), the designated energy is divided UNEVENLY between the connected flash heads. A flash head connected to OUTLET 1 receives 25% of the energy; OUTLET 2 provides 25% and OUTLET 3 (marked with a larger white dot than the other two) will supply 50% of the total energy available.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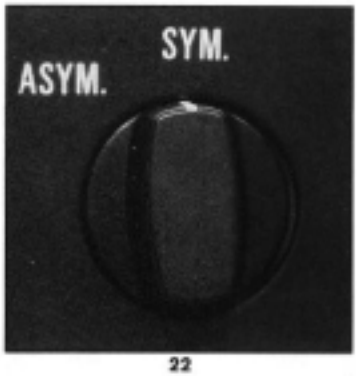

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Pro-514800: In the case of the Pro-5/4800, Twin flash heads should be connected to OUTLET 3 (marked with two white dots) in order to receive full energy from the generator. As an alternative, PF flash heads can be connected to OUT-LETS 1 and 2 (marked with one dot), by which they will receive 2400 J/Ws each. If two PF flash heads are connected to OUTLETS 2 and 3, they will each receive 1200 J/Ws that is, half of their total capacity. If two PF flash heads and one Twin flash head are connected to the Pro-5/4800, the PF's will each receive 25 % of the total energy, and the Twin, 50%.

23. MODELLING LIGHT CONTROL

The modelling light is controlled by a dial on the generator panel. This dial is also used to initiate charging as the generator will not charge when the dial is on "0". If the generator is charged when the dial is turned to "0" the charge will be released and no futher charging will take place. However, when the dial is in any other position, the generator will charge. Dial settings represent the following:

- 0 — Stand by. Flash, modelling light and charging not in function.

- 1/1 PROP, 1/2 PROP, 1/3 PROP — Modelling light is receiving the designated proportional energy at either full, one-half or one-third intensity.

- MAX — Modelling light is at maximum light strength, regardless of flash energy designation.

- FLASH ONLY — Modelling light off.

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The settings 1/1, 1/2 and 1/3 for proportional modelling light intensity should be used to align the modelling light and the flash energy in the following case:

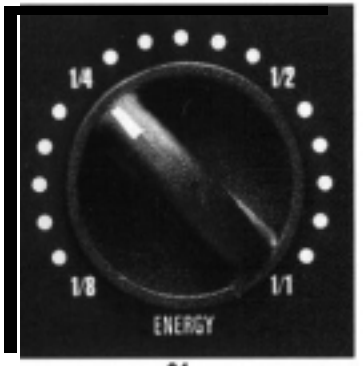
When several units are used, each with a different number of heads: Use dial setting 1/1 for a generator with ONE connected flash head. Use setting 1/2 for a generator with TWO flash heads. Use 1/3 for a generator with THREE flash heads.

When several units are used, each with a different total energy: A 2400 generator should be on 1/1 when used with a 1200 generator. The 1200 should be set at 1/2 intensity. A 4800 generator is set at 1/1 if used together-with a 2400 generator. The 2400 should also be set at 1/1. If both these are used together with a 1200 generator, this one should be set at 1/2 intensity. (The 4800 model has a stronger modelling light than the standard equipment.)

The modelling light is calibrated to give light exactly in proportion to the designated flash energy. Furthermore, the modelling light is protected from sudden inrush current by a built-in system that allows for a "soft" start-up. During initial charging after the unit is connected to the mains, the modelling light is off and does not come on until the generator is fully charged. If the modelling light does not go on when the ready lamp lights, check the switch on the flash head's back side to make sure it is on. In case of overheating in the flash head the modelling lamp is turned off by a thermostat.

24. ENERGY CONTROL

Energy is controlled by a dial on the generator. panel. On all models, the dial features stepless advance from 1/1 intensity to 1/8 (four f-stops). When an "A" model is being used with one flash



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head connected to outlets 2 or 3 (in combination with the SYM/ASYM mode selector) the energy can be regulated from 1/1 to 1/32 (six f-stops). The energy control dial is equipt with index positioning to 1/6 f-stops, making it possible to repeat previous dial settings or to verify in writing that certain dial settings were used. The flash energy is calibrated and stabilized to give exactly the desired level. When the generator has been charged to the designated energy level, a short audible signal sounds and the big white ready lamp goes on. When a lower energy level is desired, an "open" flash should be triggered by pushing the ready button, so that the excess energy in the generator can be released. The next flash, at the lower setting, will conform to the designated energy level. When a higher energy level is desired, the generator will automatically adjust to the designated level.

25. CHARGING

Charging time varies according to energy levels. The difference can be as great as from 0.2 seconds (Pro-5/1200 at 1/8 intensity) to approx. 6 seconds (Pro-5/4800 at 1/1), based upon a normal mains supply voltages. Charging time can be decelerated by releasing the FAST button on the generator panel. This slower charging time is useful when mains energy is weak, since it does not allow the unit to tax the mains fuses unnecessarily. The first charge, after mains cable connection, is always to full energy and always in a slow step mode (pulse charging). Thus, charging proceeds in stages, while at the same time the status of the capacitors is being gauged. Depending on the current leakage of the capacitors, which can be high when the generator has not been used for a while, initial charging time can vary. In extreme cases, it can take up to several minutes, but normally it takes less than 60 seconds. This protects and reconditions the capacitors and will prolong their life expectancy. Once the flash unit has been turned on, it is possible to turn it off for a few minutes without it beginning to pulse charge again.

26. AUTOMATIC SAFETY FUNCTIONS

In case of malfunction, charging will be aborted after 42 seconds. Simultaneously, an audible signal will be activated, sounding repetitive long signals. The signals can be stopped by disconnecting the power cable.

Pulse charging of the capacitors allows "gentle" charging after the initial mains connection. The automatic voltage sensor will eliminate any mistake regarding AC connection.

The safety plug on the flash head prevents arcing.

A thermostat-controlled fan in the generator and flash head will automatically go on, to cool the capacitors and other electronic components if their temperature exceeds allowable limits.

Thermal cut-off of the modelling lamp will occur if the head is overheated.

The modelling lamps soft start increases their life expectancy.

27. THE AUDIBLE SIGNAL

A short audible signal indicates that the generator is fully charged. Long, repetitive signals warn of a malfunction. The signal can be turned off by releasing the SOUND button on the generator panel.

26. PROFOTO'S RELIABILITY TEST

The R-Test is the rigorous routine that all Profoto equipment is subjected to before being released for production. The Pro-5 flash unit is required to produce 720 flashes at full energy continuously during the course of one hour, the equivalent of the flashes needed to take 20 rolls of film with 3 6 frames each. After the test, we examine the equipment to see that no functional disorder has occured, and that operating temperatures are within the normal limits. The R-Test is your guarantee that the Pro-5 can take rigorous treatment without suffering damage.

29. TECHNICAL DATA	Pro-5/1200	Pro-5/2400	Pro-5/4800
Guide No. at 100 ASA, 50°, in meter/feet:	140/460	201/660	2871940
Flash duration (t 0,5) with symmetrical energy distribution:			
ONE flash head	1/1000 sec.	1/650 sec.	1/650 sec.
TWO flash heads	1/1600 sec.	1/1000 sec.	1/650 sec.
THREE flash heads	1/2600 sec.	1/1600 sec.	1/650 sec.
with assymetrical energy distribution:			
in 50% outlet	1/1600 sec.	1/1000 sec.	
in 25 % outlet	1/2700 sec.	1/1700 sec.	
with a power split cable in the 25%-outlet:	1/4300 sec.	1/2700 sec.	
recycling time:			
100 V	0.4 – 2.5 sec.	0.5 -4.5 sec.	1.3 – 10.3 sec.
117 V	0.3 – 1,7 sec.	0,4 - 3,2 sec.	1,1 - 6.9 sec.
220 V			
240 v	0.2 – 1.3 sec.	0.3 – 2.4 sec.	0,8 - 5,1 sec.
Slow recycling (220 V)	8 sec.	12 sec.	22 sec.
Size: cm (width/length/hight)	18 x27x 31	18x27x35	18x27x45
inch	7x11x13	7x11x15	7x11x19
Weight in kg/lbs:	11,5/25	13,5/29	17/3 6
Total modelling light max:	1500 W	1500 W	
per outlet max:	1000W	1000W	1000W