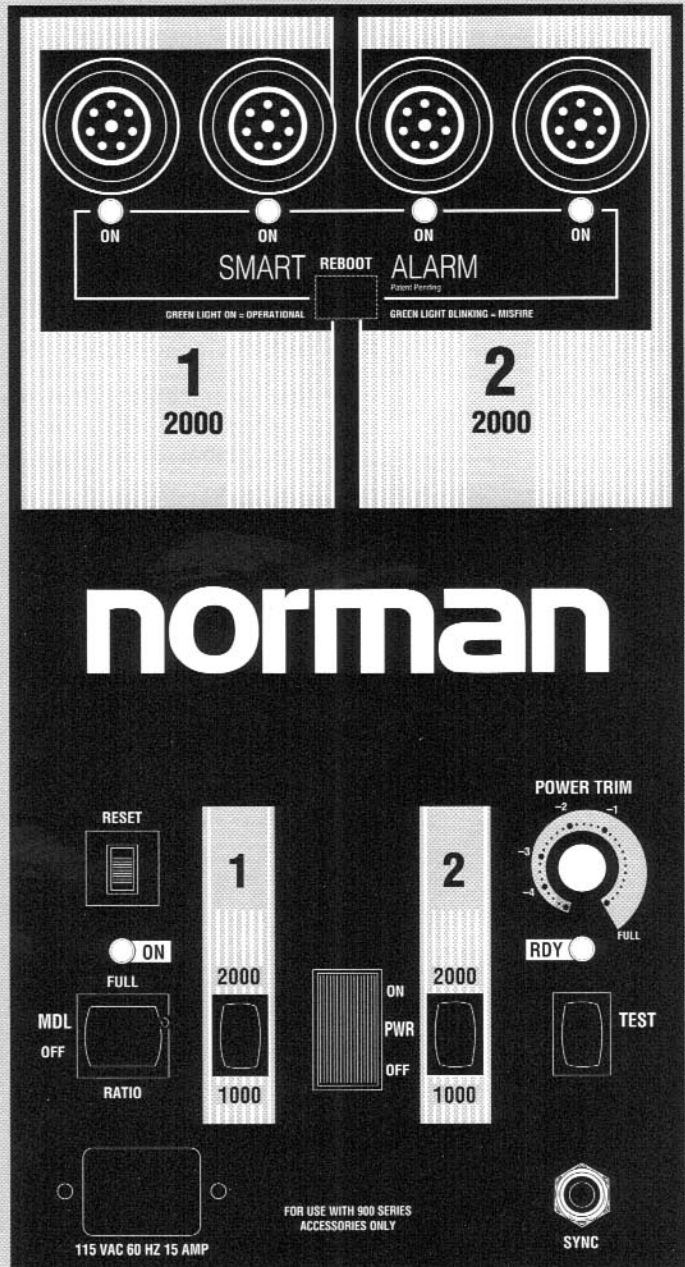




INSTRUCTION MANUAL



P40/40



P40/40









Welcome to the Norman family of interchangeable flash equipment.

The 40/40 is a 4000 w-s flash power supply, divided into two channels of 2000 w-s, both with two lamphead connectors and with its own full/half (2000/1000) control switch. If all 4000 w-s is desired from a single light, the Norman LH4000 Dual Cable Lamphead can be utilized. This provides almost one stop additional light than one lamphead at 2000 w-s, with an identical flash duration (1/275 second).

The 40/40 utilizes the latest in electronics technology. Two "sister" boards slide into the "mother" board, which simplifies assembly and servicing. The design criteria was to make a high-power flash unit with moderate versatility and extreme dependability.

We believe that the longer you use the 40/40, the more you will appreciate the engineering expertise that went into it:

-  "Smart Alarm"™ Automatically senses which lights are in operation with no switches [pat. pending]. Has both audible and visual indicators.
-  Power Trim A full 4-stop trim (calibrated) with a 31-detent pot for ease in relocating a previous setting.
-  Snap-Lock Connectors Improved lamphead connectors snap into place and have stronger (heavier duty) pins than previous Series 900 connectors. Arc-proof circuitry virtually eliminates the possibility of damaging a connector while connecting a light when the power is on.
-  Slide-in circuits Makes servicing a breeze.
-  Two-year Limited Warranty Parts and labor.
-  Interchangeable with the entire Series 900 line Over 80 lamphead and accessory items support the 40/40.



- 1 AC Inlet
- 2 PWR Switch
- 3 ON Light
- 4 RESET Breaker
- 5 RDY Light
- 6 TEST Button
- 7 SYNC Outlet
- 8 MDL Lamp Switch
- 9 POWER TRIM
- 10 SMART ALARM Panel
- 11 REBOOT Switch
- 12 2000/1000 Switches (2)
- 13 Cooling Fan
- 14 Snap-Lock Connectors (4)

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READ FIRST - IMPORTANT SAFETY INSTRUCTIONS - ON BACK COVER

EXPLANATION OF INDICATORS AND CONTROLS

1. AC Inlet

The AC power cable (part number R4156, included) connects to the AC Inlet and to a standard 115 volt, 60 Hz wall outlet.

The 40/40 is equipped with an automatic capacitor discharge circuit that activates when the AC is disconnected and/or when the PWR Switch is off. This causes the main flash capacitors to discharge automatically for electrical safety.

2. PWR Switch

Turns the power on/off to the flash circuits. The modeling lamps are controlled independently via the MDL Switch.

The main flash capacitors discharge automatically when the PWR Switch is off. See AC Inlet (above).

3. ON Light

Illuminates red when the power is on.

4. RESET Breaker

Disconnects the AC power from the flash circuits in the event of a electrical overload. If activated, the breaker will pop out about 1/4". To reset, wait about 30 seconds and depress.

5. RDY Light

Illuminates green continuously when the capacitors are at 100% full charge and the unit is ready to trigger. When adjusting the POWER TRIM Dial downwards, the RDY (ready) Light will blink until the capacitor voltages automatically adjust to the new power setting. Then, the RDY Light will illuminate continuously once again. There is no need to flash the unit one time to achieve the new power setting.

Note - Recycle time is affected by the quality of the incoming AC power line. A "soft" (weak) power line will sag under recycling load thereby lengthening the recycling time.

6. TEST Button

Depress to flash the unit. Handy for testing purposes or when making multiple exposures for "open" shutter photography.

7. SYNC Outlet

The Sync Extension Cord (part number R4155, included) connects to this outlet. The sync jack is a standard 1/4" monaural microphone connector. The advantages of this type of connector, over a twin-blade outlet, are:

1. It cannot be connected to an electrical wall outlet accidentally.
2. Polarity is always correct at the pack end of the cable.
3. The connectors are readily available at any electronic supply store.

Polarity at the camera end of the Sync Extension Cord is important to prevent the unit from self-flashing or misfiring. To test polarity, touch the metal end of the PC camera connector to any exposed non-painted and non-anodized metal on the pack, if this causes the unit to flash, the polarity is reversed. To correct this, reverse the connection between the camera sync cable and the sync extension cord.

The voltage and current at the SYNC Outlet is about 12-volts at 1/2 milli-amp.

8. MDL Switch

Controls the modeling lamps. There are three switch positions:

- FULL – Modeling lamps are at full brightness. See note below.
- OFF – Modeling lamps are off.
- RATIO – Modeling lamps ratio to the flash outputs automatically. When a Channel Output switch is set to half power (1000 w-s), the modeling lamp on the corresponding channel switches to half illumination automatically. If two lampheads are utilized on the corresponding channel, the modeling lamps are not adjusted downward further.

Note - The AC Power must be on for the modeling lamps to function on the RATIO position.

9. POWER TRIM Dial

Adjusts the flash output over a 4-stop range, while maintaining all preexisting lighting ratios. The 31-detent pot enables you to locate a previous setting accurately without having to remeasure the output with a flash meter. Simply count the number of clicks. For operational ease, the panel is calibrated with f-stop reduction numbers.

Modeling lamp outputs are unchanged, regardless of the setting of the POWER TRIM Dial.

10. SMART ALARM Panel

This is an automatic alarm system that warns the operator in the event of a lamphead misfire. It has both audible and visual features. To operate, connect the lampheads and flash the system once. This automatically programs the Smart Alarm. Hence, there are no switches to set (patent pending).

The corresponding green Smart Alarm ON Lights will illuminate to indicate which lampheads are in operation. Subsequently, if one or more of the lampheads fail to flash, an audible "beep" will sound for about one second and the corresponding ON Light will blink continuously until either the problem is corrected or the lamphead operates. Hence, if the unit "beeps", the operator should look at the Smart Alarm ON Lights to determine which lamphead(s) malfunctioned.

11. REBOOT Switch

If a lamphead is removed while the power is on, depress the REBOOT Switch to reprogram the Smart Alarm for the actual lampheads in operation. Test flash the unit and the Smart Alarm is reprogrammed automatically.

Failure to depress the REBOOT Switch will cause alarm to believe that the deleted lamphead is malfunctioning. Hence, the unit will continue to "beep" after each flash and corresponding ON Light to blink continuously.

Switching the PWR Switch off and on will also reboot the Smart Alarm.

12. 2000 /1000 Power Switches

Controls the light output on Channel 1 and Channel 2 independently. When a switch is set to the 2000 position, 2000 w-s is present on the respective channel. The two lamphead connectors are wired together (in parallel) so that if two lights are utilized the power splits evenly between them (1000 w-s each).

Similarly, when a switch is set to the 1000 position, 1000 w-s is present on the respective channel. If two lights are utilized on that particular channel, the output would be 500 w-s per light. Of course, the light outputs can be trimmed down up to 4-stops so that a minimum power on one channel could be as low as 31 w-s:

WATT-SECONDS	LIGHT OUTPUT REDUCTION
2000	Full power on one light
1000	Either half power using one light, or full power using 2 lights on one channel.
500	Half power when using two lights on one channel:
250	-1 stop with Power Trim adjustment.
125	-2 stops with Power Trim adjustment.
62	-3 stops with Power Trim adjustment.
31	-4 stops with Power Trim adjustment.

These switches are electronically protected and can be operated at any time without damage.

13. Cooling Fan

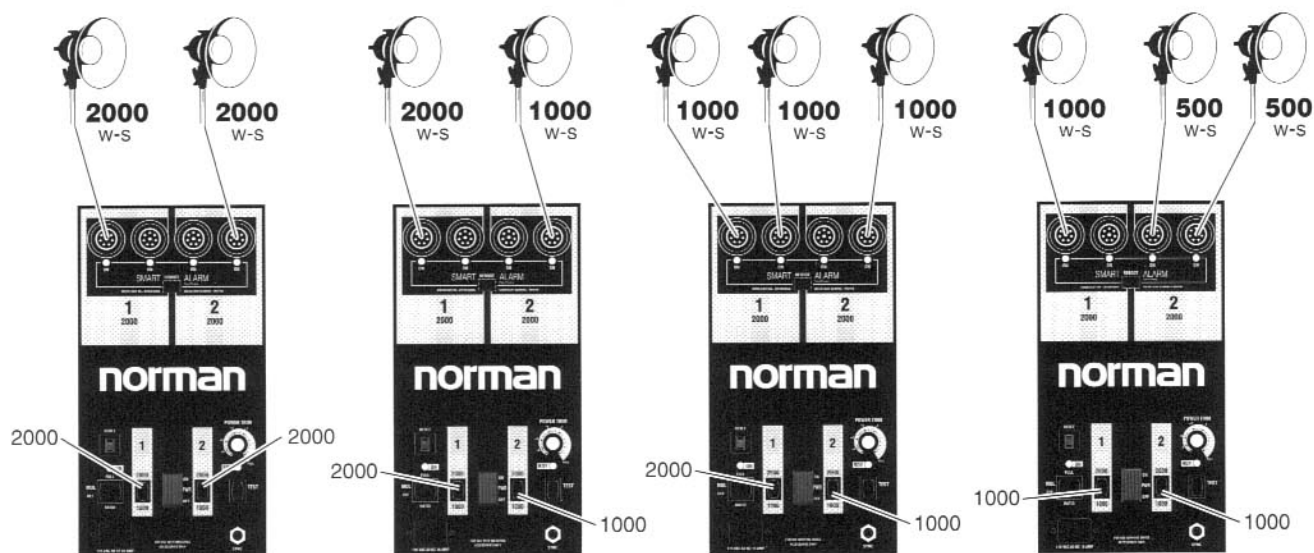
The 40/40 utilizes forced air cooling. The air intake is located on the front end of the unit, as illustrated on page 1. Exhaust vents are located on the left side (lower half). For optimum performance the unit should be used in a manner that does not block the air flow.

14. Snap Lock Connectors

Four lamphead connectors (2 per channel) are utilized. They are of an improved design; stronger pins, and snap-lock construction. The female connectors have "C" ring brackets that pressurize steel ball bearings which lock into the groove on the male connector.

To disconnect pull upward, grasping the male lamphead connector at the ribs, without grasping the "C" ring on the female connector. The thumb can be placed on the Power Supply top, to provide leverage when disconnecting a lamphead.

POWER OPTION EXAMPLES



40/40 SPECIFICATIONS							
OUTPUT LEVEL (w-s)	4000	2000	1000	500	250	125	62
RECYCLING TIME* Seconds to 100%	5	3	1-1/2	3/4	1/2	2/5	2/5
GUIDE NUMBER (ISO 100)							
Bare bulb	300	210	150	105	75	52	36
5DL Reflector	300	210	150	105	75	52	36
5E Reflector	560	400	280	200	140	100	70
5W Reflector	530	365	255	182	127	90	63
5X Reflector	235	170	119	85	60	42	30
5DL & White Umbrella	365	255	175	127	87	63	43
5DL & Silver Umbrella	420	294	205	144	100	70	50
FLASH DURATION: One light at 2000 w-s - 1/275 second One light with 1000 w-s Channel Switch - 1/550 second One light at 1000 w-s using Power Trim - about 1/275 second Two lights on one channel at 1000 w-s each - 1/550 second Two lights at 500 w-s each using Channel Switch - 1/1100 Two lights at 500 w-s each using Power Trim - about 1/550 second Varying the Power Trim dial has little effect on flash duration.							
SIZE: Height 11", Length 12.75", Width 7.00" WEIGHT: 27 lbs. AC INPUT VOLTAGE: 90-135 volts 50-60 Hz. Recycle time varies with the line voltage level, but light output is stabilized at a fixed amount.. DC OUTPUT VOLTAGE: 1000 volts with the Power Trim at "full", and lower when the power trim is adjusted downward.							
* Recycle Time is affected by the impedance of the AC line (the distance between the power meter and the wall outlet).							

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IMPORTANT SAFETY INSTRUCTIONS

When using your photographic equipment, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions.
2. Care must be taken as burns could occur from touching the modeling lamp.
3. Lamphead must be disconnected from power supply when inserting or removing flash tube or modeling lamp.
4. Do not operate the appliance with a damaged cord or if the appliance has been dropped or damaged until it has been examined by a qualified serviceman.
5. If an extension cord is necessary, a cord with a suitable current rating should be used. Cords rated for less amperage than the appliance may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
6. When practical, unplug the appliance for the electrical outlet when not in use. Never yank the cord from the outlet. Grasp the plug and pull to disconnect.
7. To avoid electric shock hazard, do not disassemble this appliance, but take it to a qualified serviceman when service or repair work is required. Incorrect reassembly could cause an electrical shock hazard when the appliance is subsequently used.
8. Use only with grounded AC outlets. Never defeat the ground pin on the AC cord.
9. CAUTION - Designed for indoor use only. Do not operate outside in the rain or inclement weather or in the presence of standing water.

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