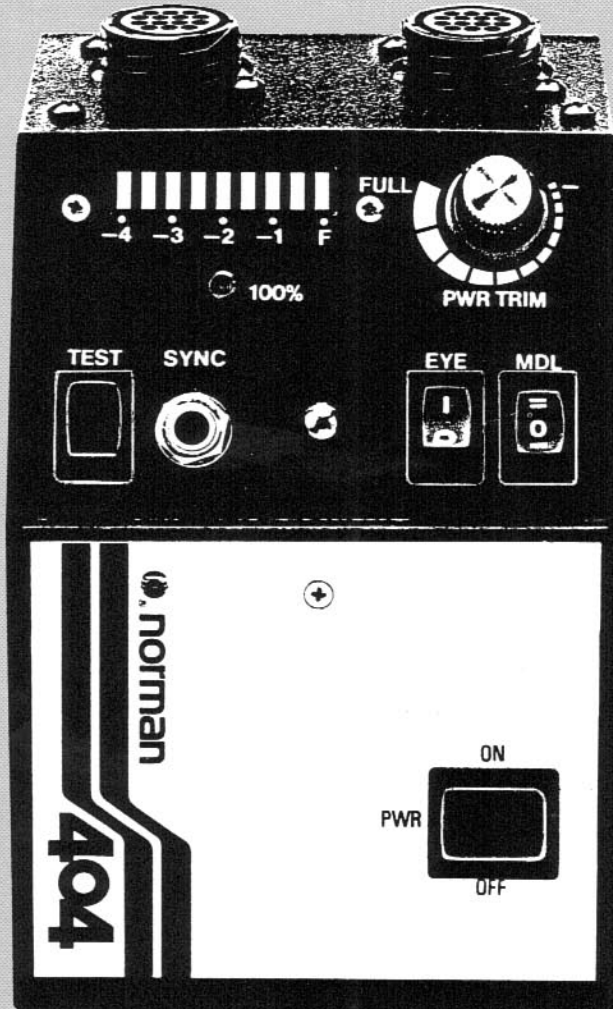




# norman

## INSTRUCTION MANUAL



# 404











# 404



## Welcome to the Norman family of *interchangeable* flash equipment!

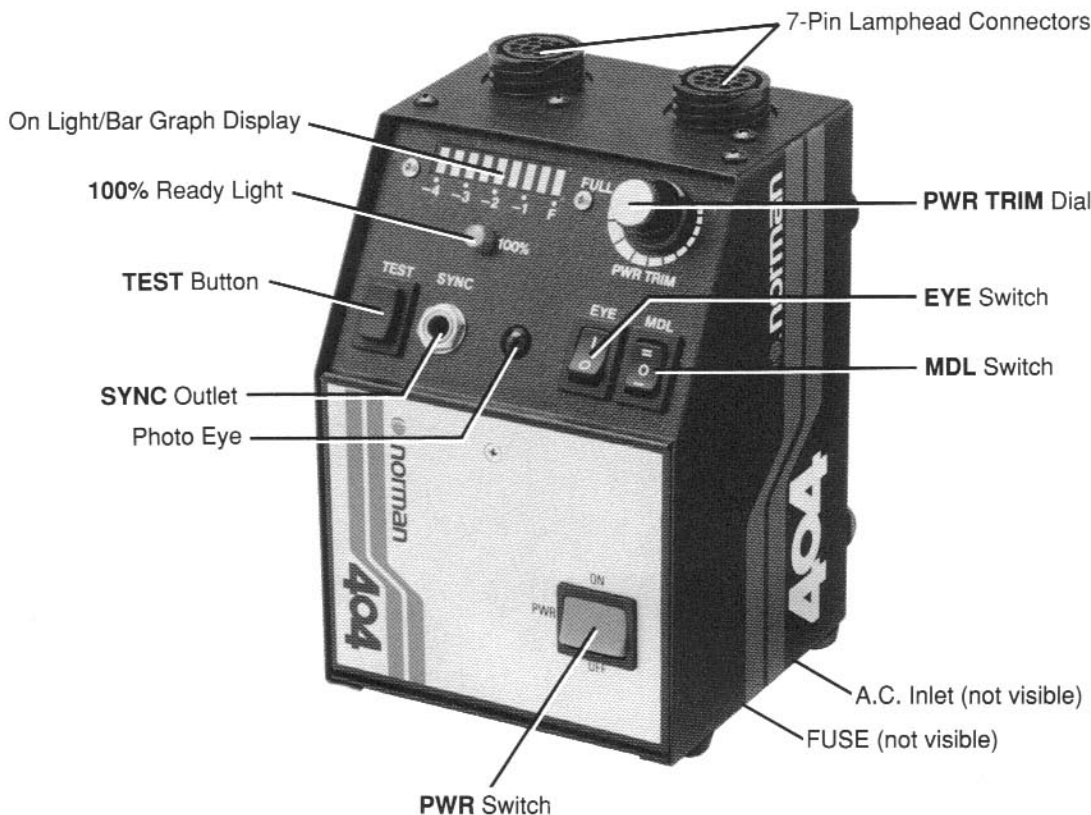
You have just purchased the 404 flash unit and/or system that will provide years of dependable service. We believe that the 404 is the most versatile and unique flash unit ever designed for the portrait photographer. We know you will really enjoy working with this powerful little flash system:

### Features include:

-  **Power Trim** - Continuously variable power over a 4-stop range.
-  **Bar Graph Display** - The power setting is visually displayed in 1/2-stop increments, on a brightly illuminated LED array.
-  **Bright Modeling** - 150-watt or 250-watt quartz modeling lamps available.
-  **Full or Ratio Modeling** - The modeling lamps will track the Power Trim Dial over the 4-stop range, or you can switch the modeling lamp(s) to remain at full power.
-  **Built-in Photo-Eye** - A very sensitive, reliable and switchable photo eye circuit is built into each 404 unit.
-  **Optional Power Rack** - Allows up to four units (1600 w-s) to be combined into a single system that can either be mounted on the studio wall or conveniently carried for location assignments.
-  **Stand Mount** - The quick-release stand mounting bracket (R4161) enables the power supply to be quickly and easily attached to a light stand.
-  **Interchangeable with all Norman Series 500 equipment** - Includes a large selection of lampheads, power supplies, reflectors and accessories.

It is our sincere desire that you will benefit from the engineering and manufacturing expertise which brings you this unique system.

If we can be of service or if you have any questions or suggestions, please do not hesitate to contact us.



# SAVE THESE INSTRUCTIONS

## IMPORTANT SAFEGUARDS

In accordance with UL 122 specifications for photographic equipment.

When using your photographic equipment, always abide by the basic safety precautions, including the following:

1. Read and understand all instructions.
2. Care must be taken as burns could occur from touching the modeling lamp.
3. 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.
4. 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.
5. When practical, unplug the appliance from the electric outlet when not in use. Never yank the cord to pull from the outlet. Grasp the plug and pull to disconnect.
6. 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 electric shock hazard when the appliance is subsequently used.

# EXPLANATION OF INDICATORS AND CONTROLS

## 404 POWER SUPPLY

**A.C. Inlet** – Located on the bottom of the power supply. Connects to the A.C. power cable for use with standard 115 volt, 60 Hz power.

**PWR Switch** – Controls the A.C. power to the flash. The voltage on the main capacitor automatically discharges when the PWR Switch is turned off.

**IMPORTANT** – It is not necessary to turn the PWR Switch off when connecting or disconnecting lights from the power supply. However, it is recommended that the MDL Switch be off (center position) during this procedure, to prevent wear and possible damage to the connector from the modeling lamp electrical circuit during plug-in.

**MDL Switch** – A three-position switch that controls the modeling lamps:

1. **FULL ( = )** – All modeling lamps are at full brightness, regardless of the output setting of the PWR TRIM Dial.
2. **OFF ( 0 )** – All modeling lamps are off.
3. **RATIO ( — )** – All modeling lamps reduce in direct proportion to the output setting on the PWR TRIM Dial, over the entire 4-stop range, thereby enabling you to compose your lighting with the modeling lamps.

The modeling lamp circuit operates regardless of whether the PWR Switch is on or off.

**On Light/Bar Graph Display** – Bar Graph illuminates when the PWR Switch is on and the power is reaching the circuit. The Bar Graph indicates the output of the flash in ½ stop increments over the 4-stop range.

**PWR TRIM Dial** – The PWR TRIM permits the power output of the unit to be adjusted in accurate, repeatable increments over a 4-stop range. If two lights are connected, the power is divided evenly between them; full power (maximum clockwise position) equals 400 w-s on one light, or 200 w-s on each of two lights. Likewise, if the PWR TRIM Dial is set to its lowest (maximum counterclockwise) position, this produces 25 w-s on one light, or 12.5 w-s on each of two lights.

There are two basic purposes for the PWR TRIM feature:

1. Allows you to fine-tune the light output to match a specific f-stop setting at the camera.
2. Allows you to ratio the flash of several 404's to provide the desired highlight and shadow densities. The Ratio modeling lamp feature permits easy viewing, so you can compose your lighting by turning a dial.

To operate the PWR TRIM Dial, simply adjust the knob to the desired level, verifying the proper level by either viewing the Bar Graph, the modeling lamp, or testing with a flash meter, until you obtain the desired setting. The 100% (ready) Light will go off until the power has automatically adjusted to the new setting.

The 32-detent Dial enables you to repeat a previous setting without the aid of a flash meter. Simply note the number of "clicks" from the end of the rotation. Resetting the Dial to a previous output is simple, accurate and repeatable.

**TEST Button** – The unit can be flashed by depressing the TEST Button. This is especially handy when checking the lights for proper operation and for multiple flash exposure photography.

## 404 POWER SUPPLY CONTROLS – Continued

**SYNC Outlet** – Triggers the flash. Plug your camera sync extension cord into this outlet. Proper polarity is important with most cameras (cameras with grounded sync contacts.)

To check polarity, simply touch any exposed (non-painted and non-anodized) metal on the camera body to any exposed (non-painted and non-anodized) metal on the flash unit. If the unit flashes when this is done, reverse the sync cord to achieve the proper polarity. This establishes a common ground between the camera body and the flash unit. If the polarity is incorrect, the unit could self-flash or flash intermittently.

**EYE Switch** – Switches the photo-eye circuit off or on. The photo eye is located between the EYE Switch and the SYNC Outlet. The photo-eye circuit is used to remotely trigger the unit from another electronic flash. It must always be “on” when using the optional RK-1 POWER RACK.

**FUSE** – Rated at 3½ amps. Located on the bottom of the power supply, adjacent to the A.C. Inlet. Protects the circuit against excessive overloads.

If the Bar Graph fails to illuminate when the PWR Switch is on and the A.C. cord is connected so that the modeling lamp functions, the fuse is probably blown. Replacement fuse is a “Littlefuse, Slo-Blo 2AG, 3½A 229” which may be obtained from a Littlefuse dealer, from a Norman dealer, or from the Parts Department at Norman Enterprises.

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# EXPLANATION OF INDICATORS AND CONTROLS RK-1 POWER PACK

**POWER Inlet** - Connects to the A.C. power cable for use with standard 115 volt, 60 Hz power.

**POWER Switches** - There are four POWER Switches; one for each 404 power supply. Each switch controls three simultaneous functions:

1. Switches the main A.C. power to the flash circuit of its respective power supply on or off.
2. Switches the trigger circuit to its respective power supply on or off. Allow two seconds after switching off the POWER Switch for the trigger circuit to disengage.
3. Switches the alarm circuit to its respective power supply on or off, thereby preventing false alarms when the power supply is switched off.

**Green POWER Indicator** - Illuminates when its respective power supply is switched on via the respective POWER Switch on the Power Rack.

**MISFIRE Indicator** - Illuminates if its respective power supply failed to flash when the main power supply has flashed (The “main” being the one connected to the SYNC Patch Cord).

The MISFIRE Indicator will remain illuminated until either its respective POWER Switch is switched off, or until its respective lamphead flashes.

Having the MISFIRE Indicator remain on provides you with positive proof as to which unit failed to flash, thereby saving the time of having to flash the unit several times to discern which unit malfunctioned.

To reset the MISFIRE Indicator, simply switch its corresponding POWER Switch off and on.

**SYNC (Patchcord) Outlet** - The SYNC Patchcord connects the number one 404 power supply (at left) to the Power Rack. This enables the alarm circuits in the Power Rack to become operational.

The camera is connected to the system either by the Splitter Jack Attachment or by connecting the camera sync extension cord to the SYNC (Camera) Outlet on the Power Rack. (Note - some Power Racks were manufactured without the SYNC (Camera) Outlet, thereby requiring the use of the Splitter Attachment).

# OPTIONAL RK-1 POWER RACK

Combines up to four 404 units, creating an unsurpassed 1600 w-s portrait studio system:

## Features include:

- **Individual Controls for Each 404 Unit** - Enables you to switch each light on or off independently from the other lights.
- **Single Power Cord** - One cord operates all four units, thereby reducing the clutter of cables on the floor.
- **Modular Power Supplies** - Should one unit require servicing, simply remove it from the rack, connect the lamphhead to the second outlet on one of the other packs, and continue shooting.
- **Audio & Visual Alarm System** - Should a lamphhead misfire, the alarm will beep for about one second and the corresponding LED light will illuminate to identify the inoperative unit.

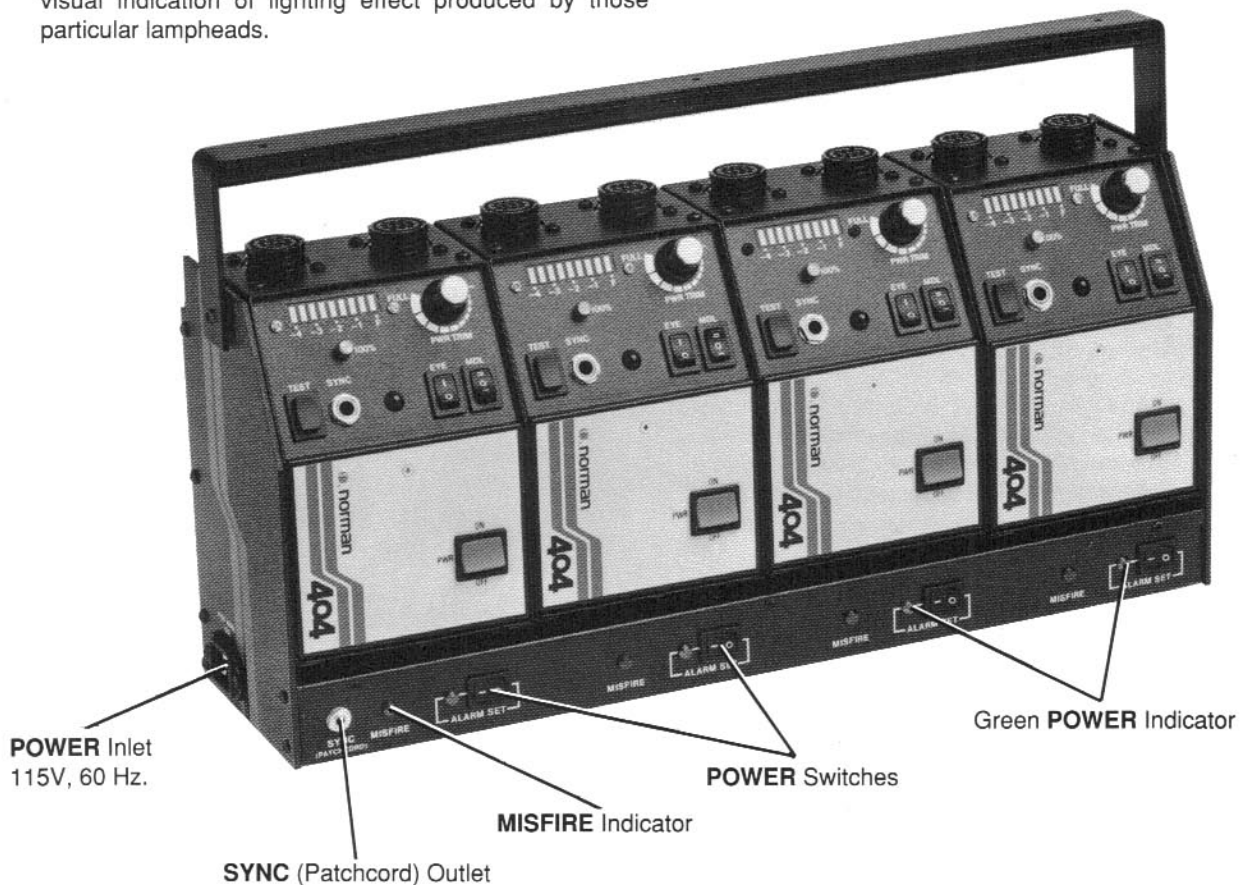
## OPERATION OF RK-1 POWER RACK

Slide up to four 404's into the rack, locking them into position with the captivated thumb screws at rear of rack. This locks the 404's into the Rack so they will not fall out, even if the Rack is tipped upside down.

Connect one lamphhead per power supply. This enables the modeling lamp/flash ratios to balance properly. Connecting two lamphheads to one power supply will cut the power to each lamphhead by 50% while the modeling lamp ratios will remain unchanged, thereby giving a false visual indication of lighting effect produced by those particular lamphheads.

Connect the SYNC Patchcord to the first 404 power supply on the left and to the SYNC Patchcord outlet on the Power Rack.

Position the EYE Switch on each power supply to the "on" position. This enables each 404 to trigger when the camera is operated.



P404 SPECIFICATIONS						
OUTPUT LEVEL (WATT-SECONDS)		400	200	100	50	25
RECYCLE TIME (Sec. to 100%)		2.4	1.2	.8	.4	.3
LIGHT OUTPUT (B.C.P.S.)						
Reflector type	5DL	1,500	750	375	187	94
	5E	5,000	2,500	1,250	625	312
	5U	15,000	7,500	3,750	1,875	937
	5W	4,500	2,250	1,125	562	281
	5X	1,000	500	250	125	62
FLASH DURATION: One light $\frac{1}{400}$ second Two lights $\frac{1}{600}$ second (constant at all power settings)						
AC INPUT VOLTAGE: 105-135 Volts, 50-60 Hz (sine wave)						
DC OUTPUT VOLTAGE: 480 volts, stabilized						
SIZE: $6\frac{3}{4}$ " H x $4\frac{1}{4}$ " L x $4\frac{1}{8}$ " W						
WEIGHT: 4 lbs. 8 oz.						