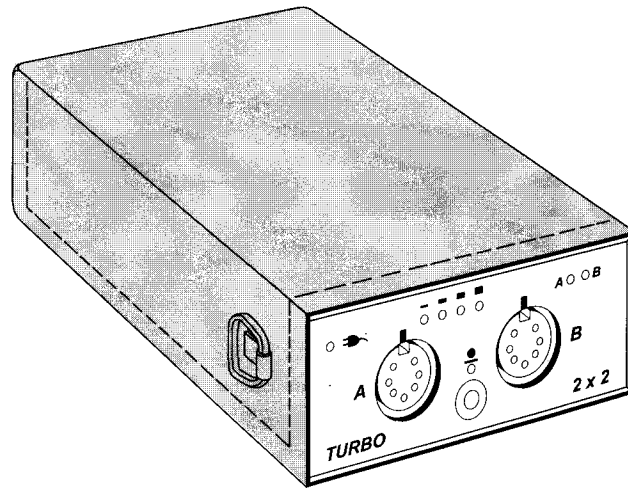


**QUANTUM** 

***TURBO 2x2***  
**Operating Instructions**



**Quantum Instruments**  
Designed and manufactured in the USA

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## 1. INTRODUCTION

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Power a digital camera and flash together with the Turbo 2x2 (two-by-two), or power two flashes or two cameras. The versatility and power of a Turbo 2x2 make it the most capable flash/camera portable power pack Quantum has developed to date.

Turbo 2x2 uses the latest technology Nickel Metal Hydride (NiMH) battery. The battery provides bursts of high power for quick flash recycling, great capacity, no memory, and long life. Quantum's NiMH battery also weighs less than other high power batteries!

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## 2. WARNINGS AND CAUTIONS

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- ***Do not disassemble the Turbo 2x2. High voltage!***
- ***Return defective equipment only to dealers, distributors, or Quantum.***
- ***Never put metal objects near either socket. Keep children away.***
- ***Turn Turbo 2x2 off before attaching or removing cables.***
- ***Turbo 2x2 is powerful! Do not exceed flash's maximum consecutive full-power flashes (see flash instructions, or else 36 flashes). Then rest flash until it cools.***  
***Note: no limit for Qflash.***

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## 3. QUICK GUIDE

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For best results charge your Turbo 2x2 *the night before* each use. The nature of Nickel Metal Hydride batteries is that they lose a portion of charge every day. Charging the night before or right before use insures maximum capacity for your job.

The "fuel gauge" is a computer calculated monitor of remaining battery power. The "fuel gauge" also displays the amount of charge during recharging. When powering cameras and flashes, the green indicators go out as battery power is used up. With only one green indicator lit less than 25% capacity remains.

When the green 25% indicator *blinks*, Turbo 2x2 has shut down power and must be recharged.

During charging, the green indicators blink on as charge is returned to the battery. When the green 100% indicator lights steadily, charging is complete. See Section 5 for more charging details.

Turbo 2x2 powers two pieces of photo gear at the same time. Socket covers keep rain and dirt out of one (or both) sockets when not being used. Turbo **Camera Cables** and **Flash Cables** come in several styles, defined by their initial letters or prefixes:

“CD” **Camera Cables** power digital cameras from any Quantum Turbo model. Examples are CD1, CD3, CD30. “SD” **Camera Cables** power digital cameras from Turbo 2x2 only. Examples are SD2, SD4, SD6.

Plug a CD or SD cable into either socket of Turbo 2x2, and into the camera it is designed for. Turbo 2x2 automatically adjusts the DC low voltage correctly for your type of camera.

“C” series **Flash Cables** power flashes from any Turbo model. Examples are CK, CKE, CM4, CV, CZ, etc. They power flashes with high voltage, rapid recycling power. Plug them into either Turbo 2x2 socket and into your flash.


Quantum Qflash “T” models come with their own power cord which plugs into Turbo 2x2.

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## 4. OPERATION

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### ***Turn Turbo 2x2 OFF before attaching or removing cables.***

To turn Turbo 2x2 **on** press *and hold* the button marked [  ] until the lights come on. To turn **off**, press *and hold* the button until the lights go out.

When Turbo 2x2 turns **on** the fuel gauge LED's turn on and off during a brief self check. When the self check finishes, the fuel gauge turns on steadily to indicate capacity.

The two sockets are called A and B. Two yellow LED panel indicators are marked A and B. The indicators A and/or B will light steadily when connected to a camera or flash. Please see Sections 6 and 7 for LED indications of the status of your Turbo 2x2 and/or any problems that it may have detected.

You may connect flashes or digicams to one or both sockets. Keep unused sockets clean and dry with the attached covers.

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## 5. CHARGING

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Charge at room temperature. Charge the night before, or charge just before use to be assured of obtaining 100% charge.

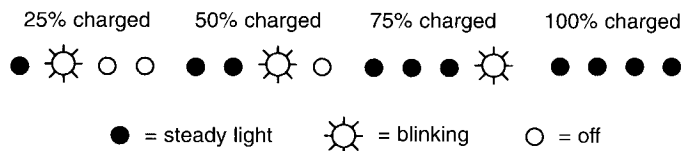
Turbo 2x2 is supplied with a universal charger that works with an AC mains power from 90 to 240 VAC. Your Turbo 2x2 is supplied with one of the following charger models: TRUS (USA, Canada, Japan); TRE (euro countries); TRUK (United Kingdom); TRA (Australia, New Zealand). Plug adapters may be used to allow charging from any 90-240 VAC power outlet. *A voltage converter is not necessary.*

**Be sure the AC mains socket is an uninterruptible line (not switched).**

The charge indicator [☉] will light when the charger is properly connected. It is important not to interrupt the charging so that the computer fuel gauge remains accurate. If the power is interrupted, the fuel gauge may read incorrectly for one charge cycle, but will correct itself on the next cycle.

A full charge takes about 3 hours. For a 1.5 hour full charge time you may purchase a second charger and connect it to the other socket of the Turbo 2x2. **Do not use any other type of charger and risk damage to the Turbo 2x2 and the charger!**

The fuel gauge indicates charging progress as shown in the diagram.



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## 6. "A" and "B" OUTPUT INDICATORS

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The indicators "A" and "B" show status of the corresponding outputs.

- A **steady** light means the output is supplying either flash (using a C Flash Cable) or camera power (using an SD or CD Camera Cable).
- ☉ A **Blinking** indicator shows when high voltage has shut down (but still supplying low voltage power).
- **Off** indicates no power for that output.

Typical examples are shown below:

- A ● ● B A and B outputs supplying camera and/or flash power.
- A ● ○ B A: supplying camera or flash power;  
B: no cord connected.
- A ☀ ● B A: high voltage shut down;  
B: supplying camera or flash power
- A ☀ ☀ B A and B high voltage shut down. Blinking stops in 30 seconds, then the indicators light steadily. CD or SD cable will still power a camera.

## 7. ERROR CONDITIONS and TROUBLESHOOTING

<i>Symptom</i>	<i>Solution</i>
A flash or camera cable is connected but the output indicator is not lit.	The cable could be broken, shorted, or it may be the wrong cable. Connect the cable to the other output; if the output indicator does not light, the cable has one of the above problems.
C type Flash Cable is connected to a flash and the output light blinks for 30 seconds.	Turbo 2x2 has detected that no flash is connected. This could be caused by a bad cable or loose cable. Check that the cable is securely connected and restart Turbo 2x2.
CD cable is connected to a camera. The output light blinks for only 2 seconds when Turbo is first turned on.	No problem. Turbo 2x2 is testing the presence of a flash.
CD Camera Cable connected to one output, C Flash Cable to the other. Both A and B LEDs blink for 30 seconds.	Probably the "C" Flash Cable has disconnected from the flash (or the cable is faulty). The CD cable will still provide camera power, and its indicator will turn on steadily in 30 seconds.
The fuel gauge's 25% green light blinks for a few minutes, and then all lights go out and there is no power to the equipment connected.	This is the low battery indication. Recharge. Check that the charger is connected to a live mains outlet that cannot be switched off.

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## 8. ACCESSORIES FOR TURBO 2x2

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### “C” type Flash Cables for flash power:

All Flash Cables power flashes with Turbo, Turbo Z, and Turbo 2x2.

CA	Armatar*	CM5+	Metz*
CH	Honeywell*	CN3	Vivitar 3900
CK	Nikon SB11, 24, 25, 26, 28-US	CO3	Olympus T32, T45
CKE	Nikon*	CS4	Sunpak*
CL3	Minolta 360PX	CS5	Sunpak*
CL4	Minolta 4000AF	CS6	Sunpak 622
CL5	Minolta*	CV	Vivitar*
CM1	Metz 45CT-1, 5	CZ	Canon*
CM4	Metz 45CL1,3,4, 45CT3,4; Hasselblad 4504		

*\* See the complete selection chart for specific model in Quantum brochures, on the product package at your dealer, or on the Quantum website, [www.qtm.com](http://www.qtm.com).*

### Camera Cables for digital cameras:

CD1-	Nikon D1, D1x, D1h
SD2-	Kodak DC 200 series, 3400, 5000 Olympus “C”, “D”, and “E” models Nikon Coolpix 800 thru 995, 5000, 5700 Epson PC850Z, 3000Z
CD3-	Kodak DCS 520 thru 760, Pro Back Canon EOS D2000
SD4-	Fuji S1, S2 Minolta Dimage 5, 7, 7i, RD3000, S404 Kodak DC4800
CD5-	Kodak DCS Pro Back 645M/ 645C Kodak DCS 300 series, 50, 120
SD6-	Canon EOS1D
CD30-	Canon D30, D60
CD100-	Nikon D100 (to be announced)

### Additional chargers for fast charging:

TRUS	USA, Canada, Japan
TRE	Euro countries
TRUK	UK
TRA	Australia, New Zealand

*Cables and accessories are updated continuously. Please consult our website, your dealer, or Quantum directly for the latest availability.*

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## 9. CUSTOMER SERVICE

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Having any trouble in using your Quantum product? We are here to help. Mail, call, fax, or email our Service Department:

Service Department  
Quantum Instruments Inc.  
1075 Stewart Avenue  
Garden City NY 11530

Tel: 516 222 6000 Fax: 516 222 0569  
email: QuantRep@qtm.com

Troubleshooting tips are available at [www.qtm.com](http://www.qtm.com), Support, Customer Support, FAQ. If you suspect a malfunction or require adjustment, return the unit to us with an accurate description of the problem. Please be sure your problem is not caused by improper operating procedure or malfunctions in your other equipment. Send all equipment carefully packaged and insured to our address above.

An estimate of repair cost on out-of-warranty merchandise may be forwarded if you desire. This will require that we contact you for approval before proceeding and will delay return of your equipment. For fastest repair time, you may pre-approve repairs up to a limit of \$85 with your credit card. We will bill you only for actual costs up to that limit. If repair costs exceed your pre-approval, we will contact you.

Paying by check will delay the repair until the check clears (up to 15 days). Payment by money order is acceptable.

Normal repair time is 10-15 days. For expedited service, contact our Service Department.

### Summary:

- Ship via UPS, Parcel Post, or other carrier, insured.
- Give a clear, detailed description of the problem.
- Give your mailing address and daytime phone number, fax #, and/or email.
- For warranty repairs include a copy of the receipt.

In addition, for out-of-warranty repairs with pre-approval:

- Provide your Visa, MasterCharge, or American Express card # and expiration date.
- Give us authority to charge repair costs up to \$85.00.
- Provide your billing address.

**Note:** Please do not e-mail your credit card information