

CANTO[®] FOLLOWSPOT OPERATING INSTRUCTIONS

FOR THE NORTH AMERICAN REGION 120/208V 60 HZ

MODELS COVERED

10907180

Canto[®] 2000 MSR FF 208V, Black

We hope that this product will meet your requirements, but if for any reason this should not be the case, we ask that you contact us directly at **888-252-5912** to help address your needs. We wish to provide all of our customers with the best quality products available. The product you purchased has been manufactured with maximum care in construction and choice of components. If you have received your equipment damaged for any reason beyond our control, please contact your local dealer who supplied the product to you within 72 hours after receiving our product.

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CAREFULLY READ THE OPERATING INSTRUCTIONS BEFORE USING THIS FIXTURE.

The instructions given here ensure safe usage of this product. User's failure to comply with the installation, operation, maintenance and safety procedures mentioned in this manual as well as those generally applicable to lighting equipment, may cause the fixture not to perform as expected.

CantoUSA accepts no liability for direct, indirect, incidental, special, or consequential damages resulting from the customer's failure to follow the installation, operating, maintenance and safety procedures described in this manual. These limitations extend to damages for personal injury, property damage, loss of operation, loss of profits, loss of product or loss of time, whether incurred by the customer, the customer's employees, or third-party vendors or users.

Apart from the instructions given in this manual, all relevant safety and health standards of the appropriate local city and state electrical / safety directives must be complied with.

PLEASE SEE OUR GENERAL TERMS OF SALE AND WARRANTY CARD PROVIDED WITH YOUR NEW EQUIPMENT OR EMAIL US FOR A COPY AT ANY TIME.

IMPORTANT SAFETY NOTES

This product may reach high temperatures depending on the model ordered. Avoid any direct contact with its metal exhaust parts.

***NEVER WORK INSIDE AN OPERATING UNIT WITHOUT IT BEING COOLED AND UNPLUGGED FROM POWER SOURCE. NEVER EVER WORK INSIDE A UNIT THAT IS TURNED ON.**

***WARNING: HIGH VOLTAGE IGNITION (MSR/MSD ONLY)**

U.V. RAYS

The lamps used on the discharge models (Canto 575, 700, 1200, 1500, and 2000 MSR / MSD) emit UV rays. Protect your eyes and never look directly at the source of light with unshielded eyes.

*These products use fan-assisted ventilation. Make sure you do not cover the fan or obstruct the airflow at any time. Please make sure the fan(s) are working correctly at all times. Should you detect even the slightest malfunction, switch the fixture off immediately and carry out the necessary servicing. Replace the fan if necessary.

*This product is rated at IP 20 and is therefore designed for interior use only. For details on maximum ambient operating temperature and minimum distance from flammable objects as well as maximum tilt angle, please refer to the instructions as is indicated on the product label.

*Replace the lamp, reflector or any lenses if damaged or deformed by heat. Make sure the lamp is cold before attempting to remove it. To perform a correct installation of the lamp, please refer to the lamp manufacturer's instructions included in the lamp box and the relevant chapters in this manual.

*Repair or replacement of any component of this product must be carried out exclusively by professional personnel in conformity with the relevant safety and health standards and only with original CantoUSA components.

*Replacement of any part of the wiring system must be carried out exclusively by professional personnel in compliance with the original wiring diagram and with components identical or compatible with those originally used in the products construction. Installation of this product must be exclusively carried out by professional personnel in compliance with the safety procedures in force in the country where the product is being used.

BEFORE YOU GET STARTED, PLEASE READ THIS INSTRUCTION MANUAL COMPLETELY.

CHECKING BOX CONTENTS:

Upon opening the boxes, please make sure the boxes contain the following items:

FOLLOWSPOT:

A. In case you bought just the followspot – item #10907180 Canto 2000 MSR FF 120V

1. Fixture:

- a. Followspot
- b. Iris diaphragm
- c. 28mm spigot with M12 self locking nut and plain washer

2. PSU:

- a. 208V-240V separate electronic ballast unit

B. In case you bought the complete kit – item #K10907180 packed in a flight case:

- a. Followspot
- b. Electronic ballast unit
- c. Iris diaphragm
- d. 28mm spigot with M12 self locking nut and plain washer
- e. Color changer
- f. Followspot tripod
- g. Philips MSR 2000 Gold Fast Fit lamp

TRIPOD STAND:

Tripod – May or may not include casters for the tripod. Casters are an accessory that can be purchased.

MOUNTING THE SPIGOT:

Make sure the tripod you are going to use features a (28mm) top aperture for the supplied spigot.

Remove the M12 nut and washer from the spigot and insert the threaded end into the center hole of the yoke of the followspot from beneath the yoke. Tighten the M12 nut with a suitable tool so that the spigot securely holds the followspot in place but allows proper movement of the fixture.

Loosen the "T" Handle screw where the spigot inserts into the tripod. Mount the followspot onto the tripod. Place the tripod in such a manner where the "T" Handle screw runs parallel to the yoke. Make sure the spigot shaft sits 12mm above the base of the tripod. There is a recess in the spigot shaft just below the base that is a good indication of where to mount the spigot. Make sure the area you are placing the product on can withstand the product load (see product label to check on weight) i.e. catwalk or balcony.

MOUNTING THE COLOR CHANGER:

1. At the front of the followspot, loosen the 2 phillips screws from one of the two front color runners.
2. Repeat with the second color runner.
3. Mount color filters on the color changer units. See relevant instructions supplied with the color changer.
4. Position the color changer unit on the front plate of the followspot, making sure that the color levers are positioned on the right-hand side of the followspot when viewed from behind and hang it to the previously positioned screws.
5. Release the color filters of the color changer in order to have access to the screws and tighten them.
6. Ensure the color changer unit is secure, and all three screws are tight.

NOTE: Canto followspots are supplied without front runners and color frames, but are available as a separate accessory kit: (# 2010910)

NOTE: Do not discard the removed color runners and color frame, as they will be needed when the followspot is returned to its original standard.

MOUNTING THE IRIS DIAPHRAGM:

The iris diaphragm supplied with the followspot has 20 leaves to size the beam from a maximum aperture of 68mm to a minimum of 5mm. A black-out iris diaphragm is available to special order.

1. Using a Phillips screw-driver remove the two phillips screws from the sides of the iris plate.
2. Slide the diaphragm in the gate area.
3. Tighten the screws.

IMPORTANT NOTICE: DO NOT LEAVE THE IRIS CLOSED FOR OVER:

- 15 minutes on Canto 575, 700, 1200 units.
- 10 minutes for the Canto 1000th / 2000th, 1500, 2000 FF MSR units while the lamp is on.

Use the front dowsing iris to cut "off" the light should you require to have the lamp on with no beam projecting onto the stage.

FAILURE TO COMPLY WITH THE ABOVE NOTICE MAY CAUSE THE IRIS AND THE FOLLOWSPOT TO SUFFER MAJOR HEAT DAMAGE AND WILL INVALIDATE THE PRODUCT WARRANTY.

SHUTTER BLADES:

Shutter blades are not supplied with the unit, but are available as a separate accessory. They are sold as single items and the relevant part number is 80852039. 4 are required.

ADJUSTING THE YOKE:

This followspot is provided with a yoke balancing adjustment. The balancing point is factory set for a standard usage of the product with a 5-disc color changer; however, should you need to adjust the balancing, please proceed as follows:

1. The followspot must be mounted on the tripod stand.
2. Using a Phillips screw-driver, loosen the 2 (M5) screws on each side of the mounting plate of the yoke.
3. Gently slide the followspot backward or forward to the required position.
4. Make sure the yoke is correctly aligned horizontally.
5. Tighten the 4 5mm screws.

WIRING:

Before being connected to power, please make sure that the unit is outfitted with a suitable plug. Make sure the plug conforms to the lamp power load. Ensure the plug conforms to the relevant local safety requirement and UL electrical standards.

To perform a correct wiring, please note that the cores in this mains lead are color-coded as follows:

Ground: green+yellow – Neutral: blue - Hot: brown

In case the colors of the wires do not correspond to the color of the connection points on your plug, please proceed as follows:

- The green or green and yellow wire is ground and must be connected to the connection point marked with the letter E or with the symbol \perp or colored in green or in green+yellow
- The blue wire is neutral and must be connected to the connection point marked with the letter N or with the symbol \perp or colored in black
- The brown wire is hot and must be connected to the connection point marked with the letter L or with the symbol \perp or colored in red

Before you finally position this product for use, temporarily connect it to a properly fused power supply to check the lamp works correctly.

VOLTAGE:

Before operating this unit, please refer to the product label mounted at the back of the fixture to check that you are operating with the correct voltage.

This model of the Canto 2000 MSR FF can only be operated at 208V.

FREQUENCY:

Frequency on this product is automatically selected by the electronic PSU (50/60Hz)

FUSE:

The PSU is fitted with a 20A 6.3x32 UR fast fuse. In case a replacement is needed, always make sure you use a suitable and compatible fuse.

MOUNTING/REPLACING THE LAMP:

Although this unit is supplied with a double-pole micro-switch for safety, we strongly recommend that you disconnect the followspot from main power before installing the lamp.

THE CANTO 2000 MSR FF CAN BE OPERATED ONLY WITH:

2000W 6000K Philips 2000 MSR Gold FastFit PGJX50 750 hrs lamp

CAUTION: ONLY PERFORM SERVICING AFTER THE UNIT HAS BEEN COOLED DOWN, UNPLUGGED FROM POWER SOURCE, AND OFF FOR 30 MINUTES.

NEVER REPLACE A HOT LAMP.

- a. When replacing a lamp use a proper thermal protection for your hands (ex. gloves) in case the lamp is still hot.
- b. Protect the lamp from abrasion and scratches. Do not install or use a cracked or broken lamp. In case a lamp cracks or breaks, disconnect from the power supply, allow the unit to cool and remove/replace the broken lamp.
- c. Never touch the lamp bulb with bare hands. Oil and grease can contaminate the quartz surface and reduce the lamp performance and life of the lamp and may cause non-passive failure.
- d. Pull plastic sleeve protection off and then install the lamp.

For MSR Lamp Replacement

- e. Loosen the thumbscrews on both sides of the lamp-holder elevator panel positioned on the under-side of the lamp house by turning (counter clockwise) $\frac{1}{4}$ turn.
- f. Lower the elevator panel.
- g. Remove the lamp (if operating a replacement) by holding the ceramic base and gently wiggling back and forth until the lamp is dislodged
- h. Place the new lamp in by holding the ceramic base and positioning it firmly in the base.
- i. Reposition the lamp holder elevator panel by turning clockwise the two $\frac{1}{4}$ turn fasteners

For FF Lamp Replacement

- e. Using a flathead screw driver open the lamp-holder panel positioned on the left-hand side of the lamp house by turning (counter clockwise) the two $\frac{1}{4}$ turn fasteners.
- f. Remove the panel.
- g. Remove the lamp (if operating a replacement) by holding the ceramic base and turning it until the lamp is dislodged
- h. Place the new lamp in by holding the ceramic base and turning it until the base is locked in position.
- i. Reposition the lamp holder panel by turning clockwise the two $\frac{1}{4}$ turn fasteners

Canto USA declines any responsibility on poor performance of the unit or damages to the inner components in case a non compatible lamp is used.

OPERATION OF THE FOLLOWSPOT:

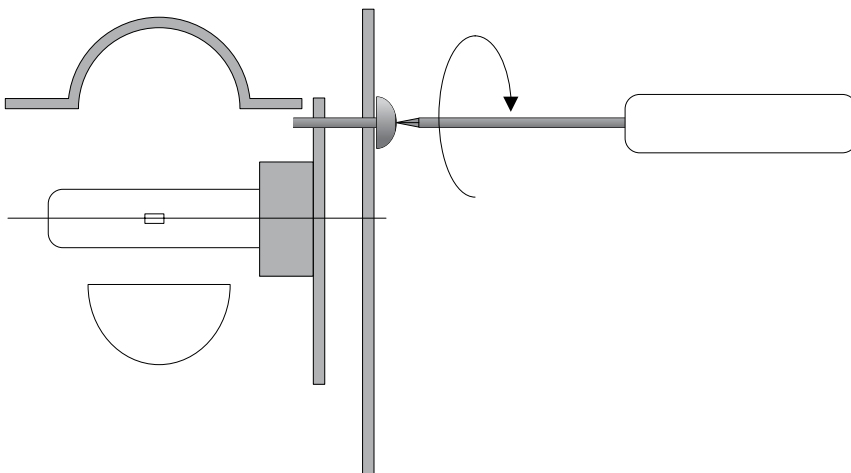
1. Plug the followspot to the electronic PSU. Please note that each followspot has been factory tested with relevant PSU. Both units are recognized by a serial number (on the outer box, on the units and on the front cover of the instruction manual). Make sure you match each followspot to the relevant PSU.
2. Connect the PSU to your 208-240 volt power supply.
3. Turn to the right (1/8 turn) the on/off selector on the PSU (fans will start working).
4. A RED LIGHT comes up from inside the ballast (visible from the ventilation slots beside the on/off selector)
5. WAIT UNTIL THE RED LIGHT TURNS GREEN AND FINALLY CYAN (GREEN+BLUE) (3/5 seconds)
6. Turn to the right (1/4 turn) the on/off selector positioned at the back of the luminaire (lamp is on).

CAUTION: ONLY PERFORM SERVICING AFTER THE UNIT HAS BEEN COOLED DOWN, UNPLUGGED FROM POWER SOURCE, AND OFF FOR 30 MINUTES.

LAMP SETTINGS AND ALIGNMENT:

For an optimum performance of the followspot, lamp alignment must be checked and performed each time a new lamp is fitted or an old lamp is replaced. Please proceed as follows:

1. Turn the followspot on and project the light on a flat surface about 3-6 feet away.
2. Completely de-focus the zoom so that you can see the lamp projected on the surface.
3. Close the douser to a slightly bigger size than the height of the lamp. You should see a circle of light and the image of the lamp on the surface.
4. If the lamp is not exactly centered in the circle of the light, set the alignment by loosening/tightening one of the three adjustment screws positioned at the bottom of the lamp holder block until the lamp is aligned.



CAUTION: ADJUST EACH SCREW VERY SLOWLY IN ORDER NOT TO CAUSE THE LAMP TO TOUCH THE OPTICAL SYSTEM. THIS WILL CAUSE BOTH THE LAMP AND THE FRONT LENS TO EXPLODE.

Once the alignment is correct, you can begin using the followspot.

FOCUSING:

This fixture features a variable beam angle from 8° to 22°. The variable beam is altered by adjusting the front and rear zoom lenses in relation to each other. The front lens defines the beam spread, the rear lens then focuses the degree of 'softness' or 'hardness' of the beam edge or shutters.

BLACK-OUT MECHANICAL DIMMER (DOUSER):

Your followspot is fitted with an adjustable mechanical dimmer (douser) to dim and blackout the light. The blackout mechanical dimmer is located in between the two zoom lenses.

CLEANING AND MAINTENANCE:

To ensure maximum performance of the product, a regular maintenance service should be carried out. Please make sure the product is cold and disconnected from power supply when doing this. Use a clean cloth and non-abrasive glass cleaner like denatured alcohol.

GENERAL MAINTENANCE:

Clean all reflective parts such as reflector, mirrors, and lenses as necessary. Check the lamp and the lenses and replace any visibly damaged component. Clean air ducts and fans in order to allow proper ventilation activity on the product, we recommend vacuuming NOT blowing. Check internal and external wiring and replace any cable which shows wear and tear.

WARNING: NEVER USE AMMONIA, BLEACH, VINEGAR, OR WINDOW CLEANER, WHICH CAN HARM OUR COATED LENSES.

CLEANING OF OPTICAL COMPONENTS:

LAMP HOUSE LENS ASSEMBLY:

Open the lens compartment by removing the four M4 Phillips head screws on the top of the lamp house. To remove the lens/reflector assembly block, remove the two M5 Phillips head screws in front on both sides. Clean the lens/mirror with a soft cloth.

ZOOM LENSES:

Slide the bottom access door(s) of the lens tube forward or back to access the optics and clean with a soft microfiber cloth.

SPARE PARTS

All components are available as spare parts. We strongly recommend you always use original components as spare parts. Please call our technical team at **888-252-5912** should you need to order and/or replace any parts on your unit.

WARRANTY

Our warranty covers all structural and manufacturer defects for three years from the date you purchased this product and 10 years on any LED array. In case of any issues, we strongly recommend you call us at **888-252-5912** or contact the local dealer who supplied the product to you. In any case, please report the serial number of the product when making a warranty claim.

AVAILABLE ACCESSORIES

3130272	Philips MSR 2000 Fast Fit used on Canto 2000 FF
20102900	Underhung Mounting Yoke
20100206	Safety Guard
20100707	Spare Iris
20107070	One Handed Iris/Douser/Controller
20100807	Gobo Holder, A/B size
20102200	Spare Spigot
3113018	Edison Plug 15 amp
3113019	Edison Plug 20 amp
3113020	L6-30 Twistlock plug - Canto 2000 FF 30 amp
3171212	Stage Pin Plug
7201285	Canto Caster Kit
80852039	Shutter Blades (4)
20105006	Followspot 5 Disc Color Changer
20105007	Followspot 6 Disc Color Changer
20102401	Followspot Tripod Stand
20102400	Leveling Leg Tripod Stand
20102311	HD Tripod with Bearing Head. 265 lbs capacity.
20102401-CW	Followspot Catwalk Mounting Stand
20102401-PM	Followspot Permanent Mounting Stand
3030277	Remote Ballast cable for Canto followspots
3113030	Color Changers Gels
20100106	Additional Color Frames
A20105106	Spare Boomerang Color Changer
80SP0068	Canto Reflector
20107180	Custom Flight Case
20107080	Canto Custom Road Case
PTW50507BK-B	HD Tripod Casters (Set of 3)
20102100	HD Stand Adapter
CT1510	Pan Bearing Adapter
SGHT00001	TelRad Targeting Site
EXTW-0001	Extended warranties are available up to 2 additional years past the standard 3 year warranty period.

Canto USA reserves the right to modify this document without prior notice.