



KIRLIAN PHOTOGRAPHY DEVICE



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Safety Precautions

Read This First

Warning: Kirlian devices are very high voltage contact print photography devices. All high voltage devices are potentially dangerous and must be operated with extreme caution. Do not attempt to operate this device without reading the instructions.

Disclaimer: Images SI Inc. or its affiliates assume no responsibility for damages consequential or inconsequential or incidental for the use or misuse of the Kirlian photography apparatus. Images makes no warranties, expressed or implied to the fitness of this device for any particular purpose other than that which is listed herein.

Safety Precautions

- A) This equipment should not be used by children or anyone not familiar with normal safety precautions to be used around electrical equipment.
- B) Do not operate the apparatus in the presence of anyone with implanted inductive devices or electrodes such as a heart pacemaker equipment.
- C) Use a pair of glass lensed sunglasses when viewing the corona discharge if you do not wear glasses. Common glass absorbs the short wave ultra violet rays which can cause eye irritation.
- D) Do not operate the equipment if there is any evidence of damage to the discharge plate or its dielectric material.
- E) Limit skin exposure to corona discharge to about 1 minute a day. Note: A tingling sensation or slight shock can be felt when touching the discharge plate or an object on the discharge plate. This is inherent in this type of Kirlian device.
- F) Use in a ventilated area to prevent ozone build-up. If multiple exposures are done in a relatively short period of time with good ventilation, ozone concentrations of 0.5 to 1.0 PPM could produce throat irritation.

Contents

Safety Precautions	2	Before You Start
Section 1	4	Short History of Kirlian Photography
Section 2	7	Instructions For Use
Section 3	12	Sheet Film
Section 4	14	Color Polaroid Sheet Film
Section 5	15	Using Standard Lens Cameras; Digital, Film and Video
Section 6	20	Grounding for Transparent Discharge Plate

Kirlian Photography – A Short History

1



The beginning of electro-photography can be traced back to the late 1700s. In this time period, Georg Christoph Lichtenberg appears to have been the first to observe electrophotographs.

Lichtenberg made note of his observation of pictures made in dust created by static electricity and electric sparks. In the photograph to the right, Lichtenberg sparks frozen in plastic.



Nicola Tesla (1880) photographed many corona discharges using his famous Tesla coil. In the early 1900s, Russian Engineer and electrical researcher Yakov Narkevich-Todka exhibited interesting electro-photographs he made. A little later, but around the same time, Dr. F. Strong of Tufts University Medical School used a Tesla coil to make electrophotographs of his hand.

Russian Researcher Semyon Davidovich Kirlian and his wife Valentina began their work with high-voltage photography by accident in 1939. Semyon Kirlian was an electrical repairman in the city of Krasnodar. He had been called to do a repair at a local research institute. While at the institute, he happened to see a demonstration of a high frequency device used for electrotherapy. As a patient underwent treatment Kirlian noticed small flashes of light between the patient's skin and the machine's glass electrode. Kirlian wondered if he could photograph that light. Kirlian substituted a metal electrode for the glass one used in the machine to prevent exposing the film to light. Then, using himself as a subject, he was able to photograph the corona discharge.

Kirlian collaborated with his wife for over 30 years, developing equipment and studying electro-photographs. They made instruments to examine high-frequency currents on living tissue as well as on inanimate materials.

The Kirlians' work was highlighted in a book published in the United States in 1970 titled 'Psychic Discoveries Behind the Iron Curtain', by Sheila Ostrander and Lynn Schroeder. This is where I as well as many others first learned of electro-photography. Their work became so well known, that electro-photography from that point on became known as Kirlian photography.

Medical Diagnostic Tool?



Many paranormal claims were made concerning the resulting images. The Kirlians' themselves claimed that this type of photography could be used as a medical diagnostic tool. Stating that disease in subjects shown as a modified or disrupted pattern of discharge, before obvious symptoms became manifested in the subject. Naturally this claim generated much interest in this country.

Keep in mind that most of the observable Kirlian phenomena that's been reported does not require any paranormal or new bio-plasma field to be explained. For example, stress in the "act of lying" can be detected using a lie detector that measures the change in a person's galvanic skin resistance.

Stress caused by lying may also be seen in a Kirlian photograph as a change in the corona discharge (aura). However this change in the corona discharge is easily explained by the change in a person's skin resistance.

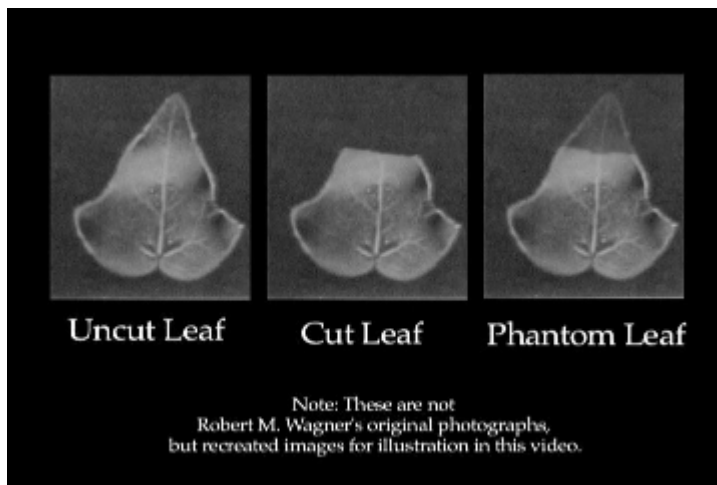
And it follows that much of the phenomena claimed to be paranormal by some Kirlian researchers can be explained by employing known physical laws, like changes in subjects skin resistance which can be due to factors like; stress, illness, fatigue, alcohol consumption, etc. Some other variable factors influencing the resulting Kirlian picture include the object's pressure against film, humidity, air pressure, voltage, frequency, and exposure time.

However the most interesting of all the Kirlian claims is known as the "phantom leaf" experiment. Here a small portion of a leaf is cut off; the leaf is then photographed using Kirlian photography. In a small percentage of cases the cut portion of the leaf appears in the photograph as a ghostly apparition. The appearance of the cut portion of the leaf, as claimed by the Soviet researchers is proof of an ethereal bio-plasma body.

Although a few Kirlian researchers have claimed to duplicate the phantom leaf experiment in their own labs, the most reported successful results (phantom leaf photographs) are from Soviet researchers. The exact experimental parameters (voltage, frequency, etc) needed to obtain phantom leafs are either not available or didn't work for me.

Phantom Leaf Experiment

Phantom leaf photographs are very easy to fake using a basic double exposure technique. Take a short exposure of the entire leaf. Stop the exposure, cut off a small section of the leaf, and then continue the exposure. In the resulting photograph the removed section of the leaf will appear as a distinct ghostly image, a phantom.

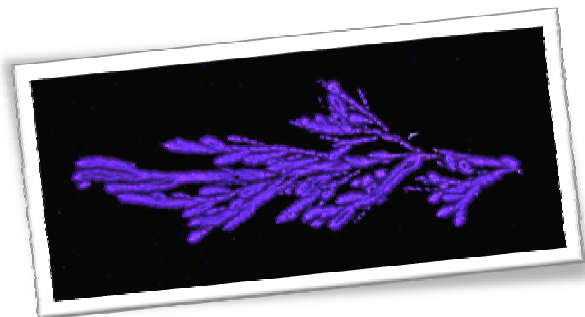


Robert Wagner of the University of California, Long Beach, on April 29, 1975 show that the "phantom effect" was obtained. The author did more than 539 attempts before getting the desired picture. The leaf recently picked was exposed 0.7 seconds at a voltage of 50kV by 330kHz. These parameters were always the same for all the pictures

Whether Kirlian photographs are showing us something new or not they are unique and often times beautiful. You may use Kirlian photography to explore the phenomena or take beautiful pictures. Proof of the phantom leaf effect, if it exists, would begin a new paradigm in both physics and biology. Kirlian photography has the potential for becoming a diagnostic tool (both biological and industrial).



Standard 35 mm camera & color film shot through transparent discharge plate. (exposure unknown)



Digital camera image. Exposure 15 seconds shot through transparent discharge plate.



The Model 4 has all control and photography functions on the front panel; the On/Off power switch, momentary contact discharge switch, frequency control and discharge plate. The On/Off power switch provides main power to the circuit. The discharge switch is a momentary contact switch that applies the HV power to the discharge plate when pressed. The frequency control varies the frequency of the high voltage electrical power going to the discharge plate. The Hi-Low switch changes the range of the frequency.

Standard film and digital cameras

The Model 4 is designed to work an optional transparent discharge plate that allows one to use standard cameras, both still and video.

Sheet Film (4x5)

The Model 4 is designed to work with all 4x 5 color, b/w 4x 5 sheet film and paper, including Polaroid 4 x 5 film. The film is placed, emulsion side up, on the black discharge plate inside the rectangle white line outline. See instructional DVD for complete instructions on use.

Kirlian Device Model 4

Battery Operation

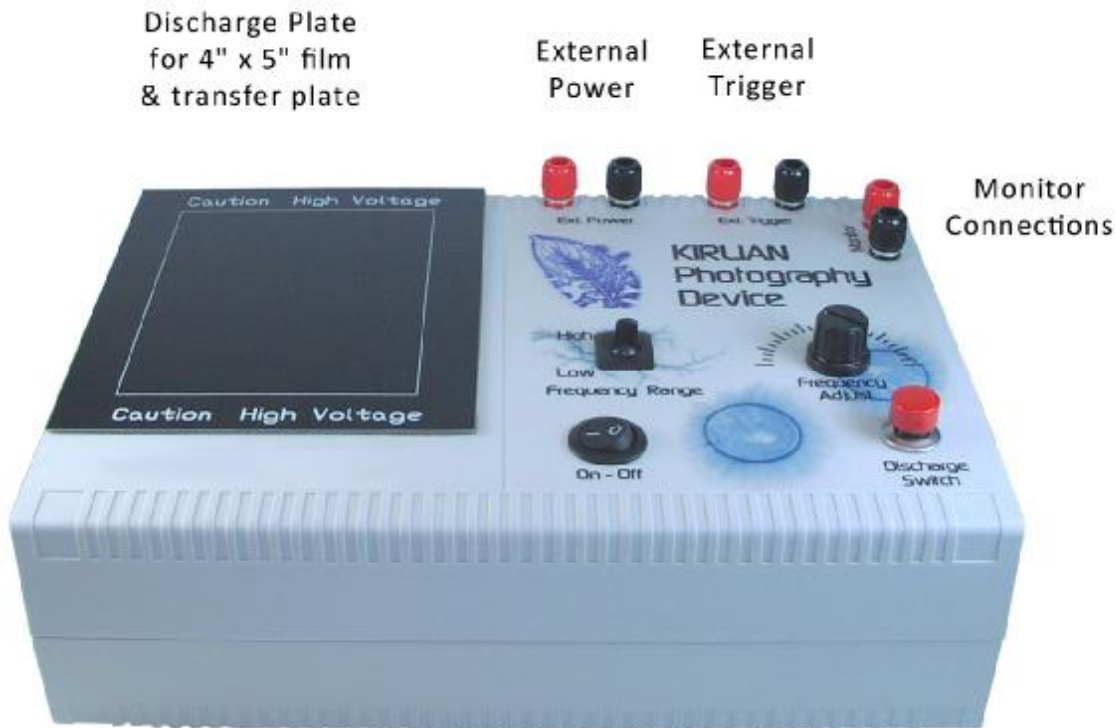
When portable field operation is required, your Kirlian unit may be operated from a suitable 12-24 volt DC source using the External Power connections. Connect the power supply to the binding posts on the upper left side marked Ext Power. Positive voltage of the DC power supply goes to the red binding post. Observe polarity; the unit will not be damaged if the polarity is reversed, but neither will it work.

External Trigger Posts

The external trigger posts allows one to control the discharge using a remote switch, instead of the discharge switch on the front panel. A simple contact switch wired to the two posts will allow remote switch operation of the device.

Monitor Posts

The monitor posts allows one to observe the pulse width and frequency of the oscillating circuit that is used to generate the high voltage output.



Factors Effecting Kirlian Images

Exposing 4x5 Sheet Film:

Caution: Exposing film using the Kirlian device must be done in a dark room to avoid accidental exposure of the film. See instructional DVD.

Factors Affecting Film Exposure Time

There are a number of factors that effect film exposure time:

- | | |
|----------------------------------|--------------------------|
| *Frequency & Voltage | * Object |
| * Object's pressure against film | * Film Speed & Type |
| * Humidly | * Temperature |
| * Dielectric properties of film | * Conductivity of Object |

To start, for smaller object use an exposure time of approximately 1/4 of a second. Larger objects that only produce a faint corona discharge one may increase the exposure time to 5-10 seconds or more.

To shoot Kirlian photographs using color sheet film, you usually need to operate the device in a light tight room or darkroom*. If you are shooting with black and white litho film there are suitable red safelights that will not fog or expose the film and allow you to see what you are doing.

*I have loaded color sheet film in complete darkness in between two black sheets of construction paper , and then turned on a dim safelight. I then used this paper film sandwich on the discharge plate, made my exposure, turned off the safelight and in complete darkness removed the color sheet film and placed it in a light tight box and sent it out for development. The developed film did not show any fogging.

The sheet film is placed on top of the discharge plate on top of the Kirlian device, emulsion side up. The emulsion side of the film can be identified in total darkness by a notch on the sheet film's corner. The emulsion is right side up when the notch is orientated on the lower right hand side, then the sheet film is placed on the discharge plate.

Basic Photography Procedure

The object you wish to photograph is placed on top of the film, see figure 1. If the object is inanimate, such as a coin, you can attach a wire from the object to an earth (or circuit) ground, see page 11. The ground wire will provide a more intense discharge from the object.

When everything is ready, press the discharge switch to expose the sheet film. During the exposure you should see a faint corona discharge around the object you are photographing. By varying the frequency of the electrical energy you can obtain different effects. Once the film has been exposed, place the film into a light tight box and bring it to your local photography lab for development.

If using B/W litho or Polaroid 4 x 5 sheet film, one has the convenience of instant development.

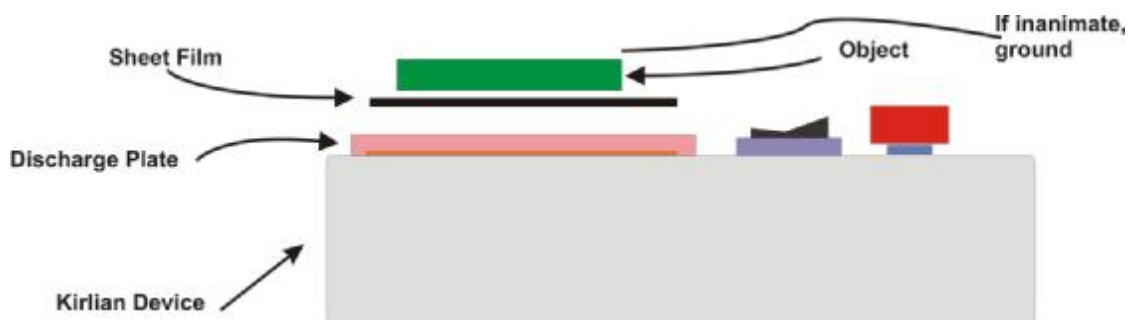


Figure 1

Photographing People



Warning: Do not photograph or operate the Kirlian apparatus in the presence of anyone with implanted inductive devices or electrodes such as a heart pacemaker equipment.

When photographing a living subject (human or animals) DO NOT permit the living subject to be grounded or to touch a ground while being photographed. This will increase the HV current flowing through the subject and will cause an unpleasant shock. As stated in the precautions, do not operate the apparatus in the presence of anyone with implanted inductive devices or electrodes such as a heart pacemaker equipment.

To photograph a fingertip corona, set up the device with the film as described before. Have the subject place their finger on top of the film. Press the discharge switch for a few seconds to expose the film. See instructional DVD.



Figure 2

Black and white ortho film is less costly and easier to work with than color sheet film. You also have the opportunity to develop the film to get immediate feedback. Someone shooting standard color film must wait to get the film develop to see what has been recorded. See figure 2. The exception to this is Polaroid 4x5 instant film.

Developing B/W ortho film is easy. The chemistry works quickly and is simple and forgiving. You only need two chemicals; developer and fixer. A stop bath is usually employed in between these two steps, but isn't absolutely necessary.

Black and White (film or prints) may not be as spectacular as color. But the experience one gains by being able to observe all the steps under a safelight is invaluable for when one has to work in complete darkness with color film.

Using a high voltage power supply in the dark can be a daunting task, so it's best to familiarize yourself with the process in the least costly manner.

Color Sheet Film

Color Sheet Film - Daylight or Tungsten Balance

Color film requires exposures to be made in total darkness. Working in total darkness can be a problem. Sometimes I sandwich the color film between two black opaque sheets of paper in total darkness, then turn on a dim safelight. The black paper prevents the safelight from exposing the film. I place the paper film sandwich on the Kirlian device's discharge plate, and place the object I am shooting on top of it. I make my exposure right through the black paper, then afterwards, I turn off the safelight and in complete darkness remove the color film from the black paper sandwich and place the film in a light tight box to be sent out for development.

Both tungsten balance and daylight film give striking color transparencies. The tungsten balance film usually produces colors in the yellows, oranges and reds. Daylight film usually produces colors in the blues and greens.



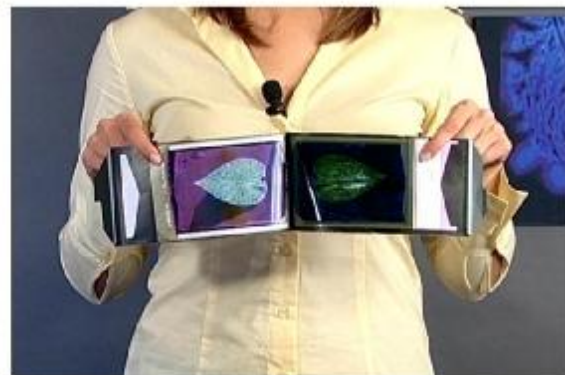
Figure 3
Daylight Type Sheet Film



Figure 4
Tungsten Balanced Sheet Film

Before the widespread use of digital photography, many electro photographs have been made using this type of material for the convenience of instant development. Polaroid film may still be employed as it provides rich vibrant colors, not usually found in digital photography of kirlian images. Exposing film using the Kirlian device must be done in a dark room to avoid accidental exposure of the film.

Complete instructions for shooting Polaroid film can be found on the instructional DVD provided with this device. Still images from the video are shown below.



To shoot Kirlian photographs using standard lens camera; digital, film and video, requires the use of a optional transparent discharge plate.

The basic procedure is the same for all camera types. To shoot Kirlian photographs using a transparent discharge plate, the object is placed on one side of the transparent plate and the camera on the other. The high voltage is applied to the transparent discharge plate and the camera shoots through the transparent discharge to capture the corona discharge around the object, see figure 4 below.

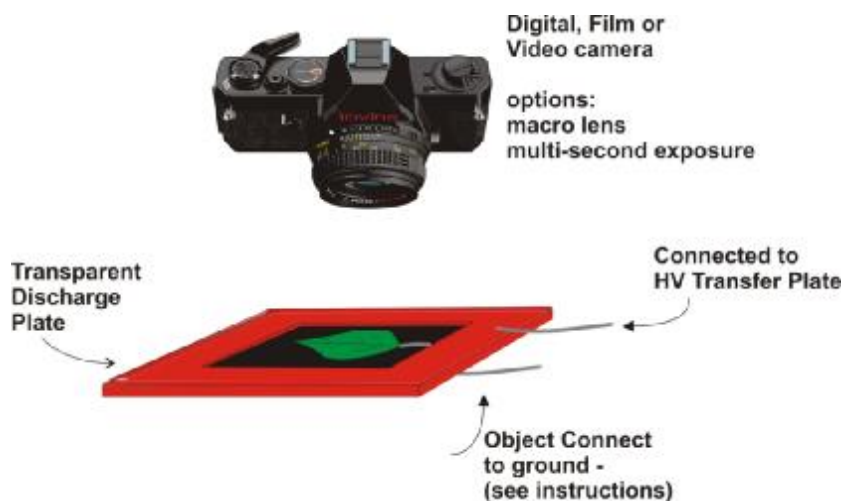


Figure 4

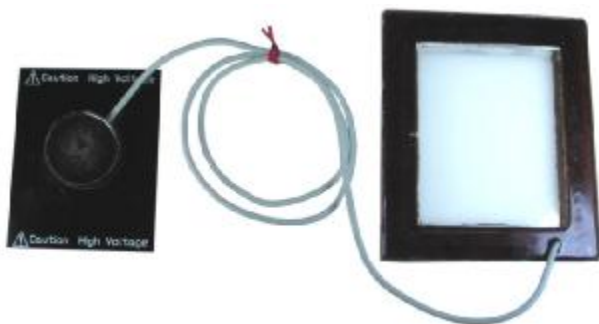


Figure 5

The transparency of the transparent discharge plate surpasses 90 percent. It consists of three components. The transparent discharge plate, HV wire, and transfer plate, see figure 5 above.

Energy is supplied to the transparent discharge plate through the transfer plate. The transfer plate is placed on the discharge plate on top of the Kirlian device, see figure 6. When the Kirlian device is activated, high voltage is transferred to the transparent discharge plate, see figure below. All controls on the Kirlian device work with the transparent discharge plate.



Figure 6



Figure 7

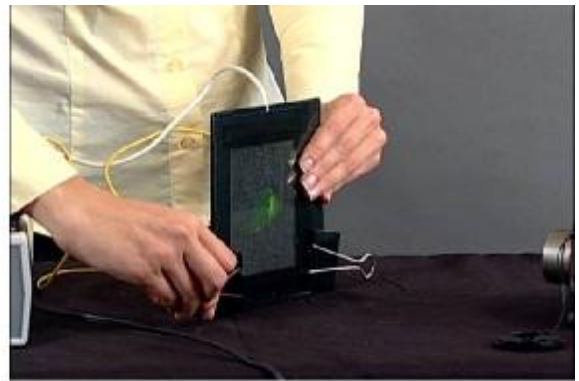
Coin shot with transparent discharge plate and digital camera.
(Exposure 12 seconds)

Typical exposure time is using a still digital camera is 10-20 seconds or greater. Film camera's with bulb setting may make multi minute exposures if needed.

Still Photography using standard SLR cameras; digital or film.

Using a transparent discharge plate for still photography and video photography is demonstrated in the instructional video on the DVD. The digital camera used for still photography in the video has a maximum manual exposure time of 15 seconds, and is capable of close up photography using a macro setting.

Still images from the digital camera portion of the video are shown below.



Description of Still Photography Segment

In the video the procedure to shoot a leaf is demonstrated. The leaf is at ground potential and the transparent electrode is at the HV potential. Make the set up in a room that can be made relatively light tight. The leaf is placed on a black non-reflecting, nonconductive surface. This improves background contrast. The transparent electrode is placed over the leaf. A thin one sided copper clad board is connected to ground using by an alligator clip wire and touches the leaf through the black background material, see page 20 on this type of ground.

The camera is positioned in front of the assembly. The view through the camera should only show the object under the transparent electrode. This is accomplished with a close up lens or macro setting on camera. The camera is manually focused onto the object with the room lights on.

Open the aperture (f-stop) of the camera as wide as possible (2.0 or 2.4). If you are using a digital camera manually set the exposure to 10-20 seconds. If you're camera has a B (bulb) setting, set the shutter to B (bulb) to make long timed exposures. With the shutter set to B, The shutter remains open as long as pressure is kept on the shutter. Using a shutter release cable attached to the camera will make taking pictures using B much easier. If using a film camera, you can use any type of color film I advise using the fastest film available, either ISO 400 or ISO 1000.

With everything set up and the camera focused, shut off all the room lights. You can use a flashlight with a filter to navigate around the room. Open the shutter of the camera, and turn on the high voltage power from the Kirlian device using the Discharge switch. Keep the discharge switch pressed for the length of the exposure in the video its 15 seconds. Turn on the room lights and look to see what picture your camera captured. You can then repeat the process to take your next picture.

Shooting Real Time Kirlian Video

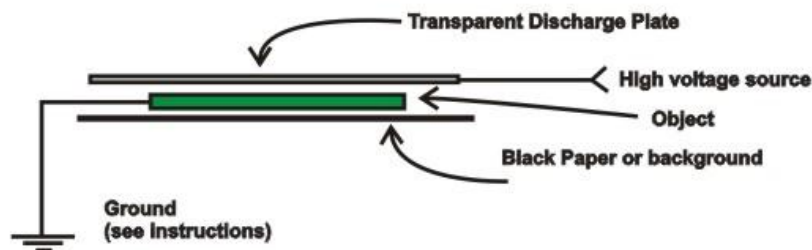
A similar technique described for taking stills is also be used to record real time Kirlian video through a transparent discharge plate. Ideally the video camera should be capable of close up photography and be able to record video under extreme low light levels.

Complete instructions for shooting real time Kirlian video using a transparent discharge plate can be found on the Instructional DVD included with this device. Still images from the video are shown below.



You may ground the object you are photographing in any number of ways. The grounding illustrations below in figure 8 detail two methods. The first illustration shows the ground wire directly attached to the object. When shooting like this many times the ground wire will be visible in the photograph. To remove the wire in the photograph I use the second method illustrated, a small hole is made in the black paper background. The ground wire is fed through the hole to touch the object being photographed. Resting the object on top of the ground wire, gives a nice black background and a ground for the object without any obtrusive wires. You may also use a small grounded copper plate in place of the wire as long as the object you are shooting makes contact with the plate through the hole of the black paper background.

Standard ground method



Alternate ground method through hole in black paper

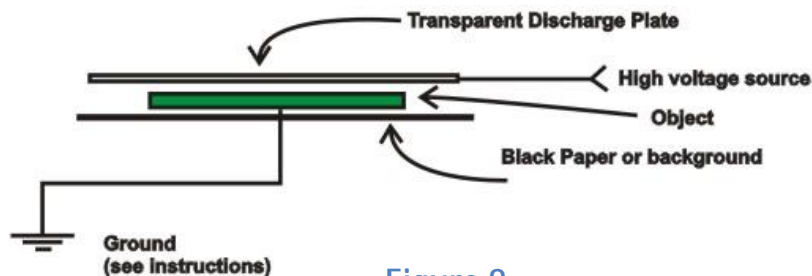
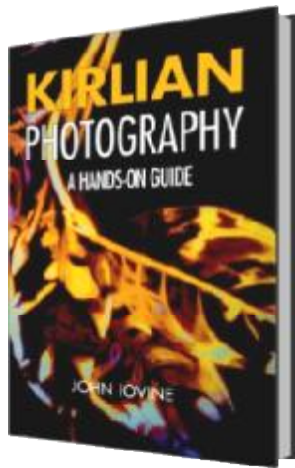


Figure 8

Optional Equipment



Kirlian Photography Book

In Kirlian Photography, John Iovine gives you all the hands-on guidance you need to produce Kirlian photographs using standard 35mm or video cameras.

You'll also learn about the history of electrophotography and many of its possible applications in medicine, industry, and the military. Especially illuminating is his discussion of the "phantom leaf" aura that continues to baffle scientists.

Transparent Discharge Plate

The optional transparent discharge plate allows one to use standard lens cameras to take Kirlian photographs, as described beginning on page 19.



Foot Switch

The foot switch plugs into the $\frac{1}{4}$ jack on the side of the Kirlian case. You can use either the discharge switch on the Kirlian photography device or the footswitch to activate the discharge plate.

The foot switch has a small switch in front that you can set to one of two positions: 'Normally Open' (NO) and 'Normally Closed' (NC).

In the Normally Open (NO) position, pressing the footswitch activates the circuit as long as your foot remains pressed on the footswitch.

In the Normally Closed (NC) position the device will be active as soon as the main power is turned on. To deactivate the HV circuit press down on the footswitch. Most people use the footswitch in the Normally Open position.