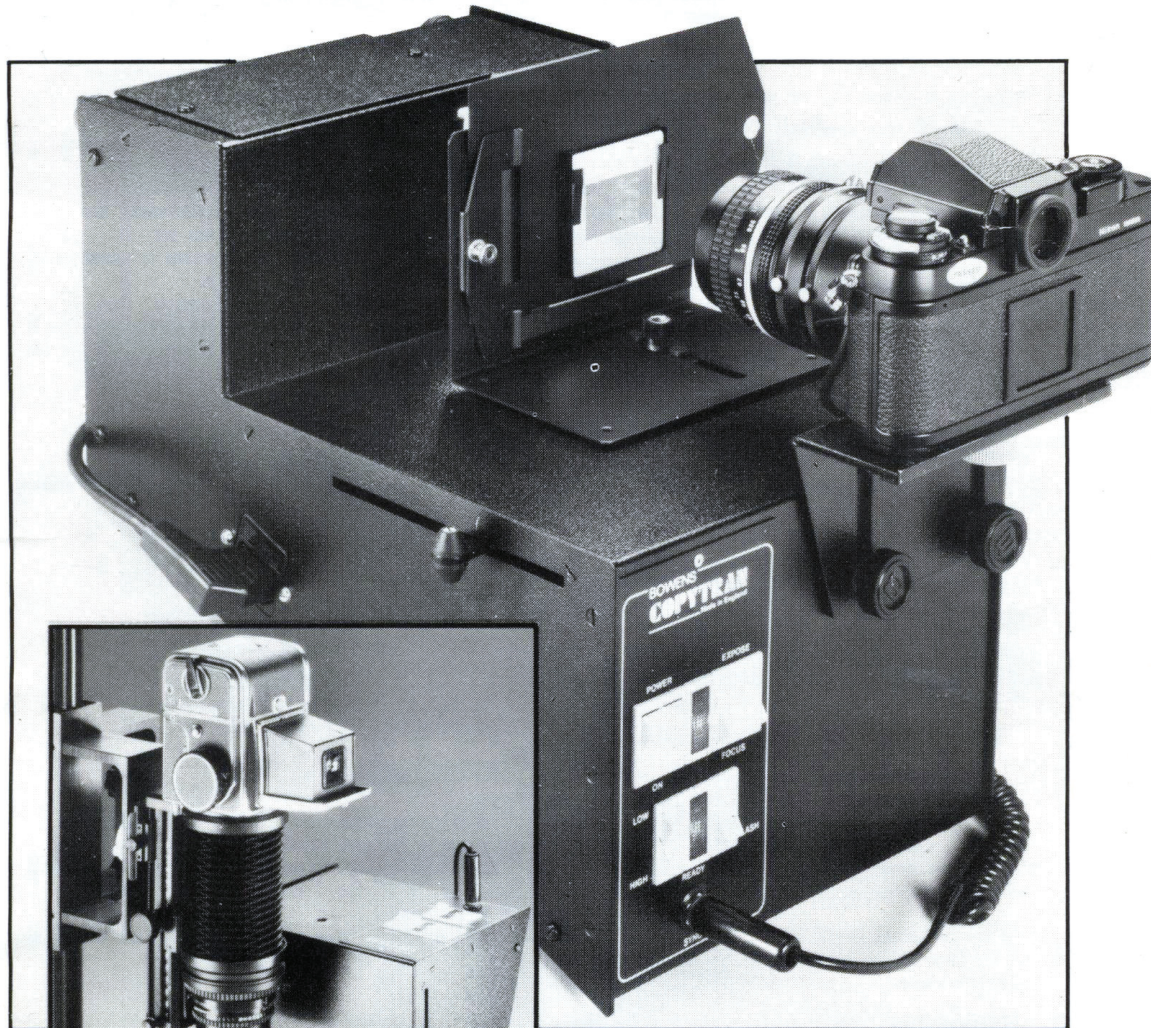


BOWENS COPYTRAM

TRANSPARENCY COPIER Operating Instructions



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BOWENS COPYTRAN INSTRUCTIONS

1 General

Fit a 3-pin plug to the mains lead as follows:- Brown wire — live, Blue wire — neutral, Yellow/Green wire — earth (ground). Always connect to a 3-pin socket.

Assemble the Copytran as shown in the illustration.

Plug in mains lead and switch ON (A). With switch (B) set to 'Focus', the opal diffusing screen (C) will be illuminated. Switch to 'Expose' — focusing light should go out and 'Ready' neon (D) will light*. Test flash by pressing 'Flash' button (E).

The low and high switch (F) changes the flash by one stop.

*It is normal for the 'Ready' neon to 'tick'. This indicates that the flash is being constantly 'topped up' and ensures that the flash is exactly the same strength for each exposure.

2 Fitting the Camera

Fit the SLR camera body (with or without motor drive)* using the appropriate slot on the camera mounting bracket (G) to position the lens axis (horizontally) within illuminated area. When fitting the camera to the bracket, ensure the camera is square by locating the baseplate of the camera hard against the lip on the rear of the bracket.

Adjust the height of the bracket to position lens axis (vertically).

NOTE: Only approximate positioning of the lens axis is necessary — the final alignment is obtained by movement of the transparency frame (see section 3).

*With some motor drives, it may be necessary to replace the normal camera mounting bracket with one specially designed to take account of the additional depth and length requirements.

Code 2054

3 Setting up with Test Slide

The test slide has 2 main uses:-

1. It provides a focusing and aligning target.
2. It has a density which equals a correctly exposed average transparency.

Place slide in 35mm frame holder, slacken knob (H) on focusing carrier, and position frame holder on carrier so that, viewing through camera, it is central to viewing screen. Tighten knob (H).

Initial testing should be carried out at 1:1.

- a. If a Macro lens (50 or 55mm) is used, fit the 1:1 extension tube(s).
- b. When using the standard lens, either fit the necessary extension tube(s) for 1:1 copying or use extension bellows (don't forget to set the iris from auto to manual). If preferred, a standard enlarging lens (50/55mm) can be used in place of the camera lens. This has the benefit of having been designed for 'flat field' to 'flat field'. Adjust focus to give 1:1.

Move focusing lever (I) on Copytran to approximately mid position. Slacken knob (J) and slide focusing carrier until image in viewfinder is approximately sharp. Tighten knob (J). Focus sharply by moving lever (I).

Because most slide mounts (both cardboard and plastic) have apertures smaller than the 24x36mm format, a true 1:1 copy may show some of the slide mount at the very edge of the copy transparency. This, however, will usually be hidden when the duplicate is mounted in a slide.

Additionally, some 35mm SLR cameras show marginally less in the viewfinder than appears at the film aperture. To assist the Copytran user to take these two factors into account, the test transparency has different coloured lines around its periphery. The use of these is explained in section 5.

4 Choice of film

Daylight Film

Virtually any 'daylight' film is suitable for use with the Copytran when using flash as the exposure source.

The flash has a colour temperature of 5600 K, and under most conditions filtration will not be found necessary.

Artificial (Light) Film

The Copytran has a Quartz Halogen focusing light (3,200 K), which is suitable for direct use on 'artificial' film.

Kodak film No. 5071 has a relatively low ASA rating and requires an exposure time of at least 1 sec. Determine aperture by a test film (section 5).

Kodak film No. S0-366 requires a short exposure and is intended for use with the flash. A basic filter pack of Wratten 2B+CC 60Y+CC 10C is recommended to convert the colour of the flash to balance with this particular artificial film. (NOTE: Filtration requirements may vary from one film batch to another. Kodak give guidance with each film). The exposure level usually falls between f4 and f8.

5 Making the test film

Always make a test film when using a different film for the first time. This is to determine both exposure setting and whether any filtration is required.

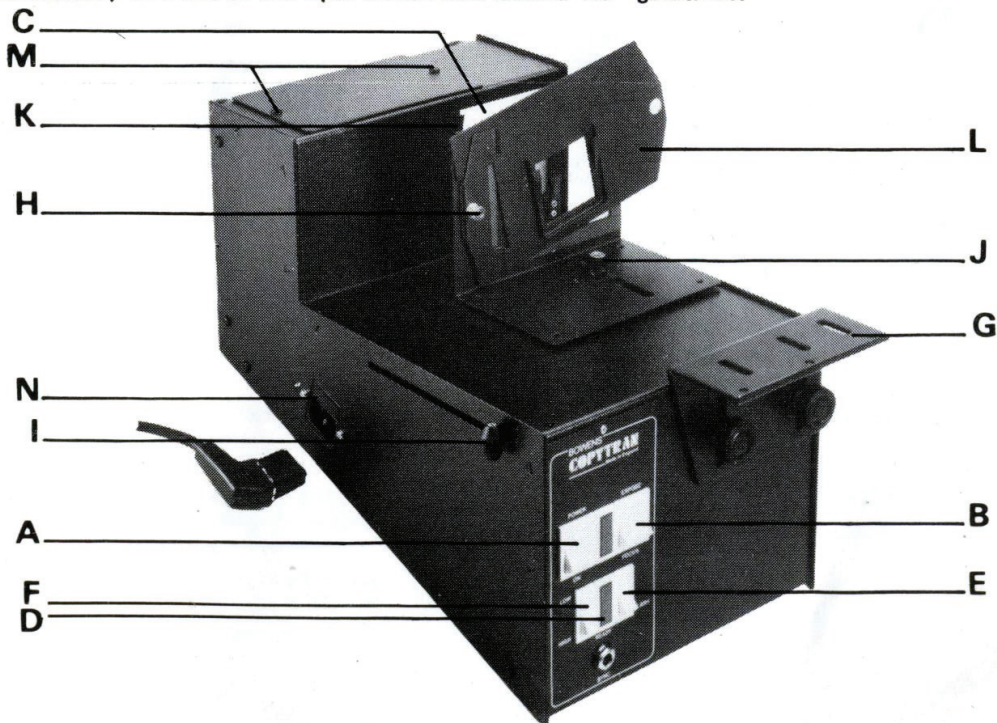
1. Use test slide provided.
2. Centralise and focus as explained in section 3 at 1:1 magnification.
3. If using flash, connect sync. lead and set flash to full. Switch from focus to flash.
4. Make a series of exposures from maximum to minimum aperture (preferably at ½ stop increments), keeping a record.
5. Process film and examine both film and test slide against a neutral light source to establish correct exposure.
6. If a colour shift is required and filters are added, take these into account on your 'established exposure'.
7. The lines around the edge of the transparency are spaced at one millimetre intervals and will assist in overcoming viewfinder/slidemount discrepancies.

6 Making copy transparencies

The exposure for your camera/lens/film combination at 1:1 has been established in section 5 for copying a normally exposed transparency. Allowance must be made if:-

- a. The exposure on your original is not correct, or, the subject content is not average. By looking at the overall density of your slide compared to the test slide provided, the need for a change in exposure can quickly be seen. NOTE: If the subject content is not average, but an exact copy is required, use the 'established exposure' setting.
- b. If you are making a copy which is not 1:1, i.e. enlarging (cropping) or reducing, then allowance must also be made in the exposure level.

When enlarging, the original transparency can be moved out of square/centre by slackening knob (H). The magnetic frame holder will be held in any given position whilst the picture is composed in the viewfinder. Re-tighten knob before exposing. When filters are used, the clips (K) immediately in front of the opal screen will hold 3"x3" gelatines.



7 Through the lens metering

When using an SLR with TTL metering and an automatic iris, in many cases it will be possible to utilise these features when making duplicates on the Copytran.

The following is a guide to this automatic exposure.

After making your test film and establishing your exposure, with your camera/lens set as before for 1:1 copying and viewing the test slide with the focusing light on, adjust the ASA setting on your camera until the automatic iris setting equals your 'established exposure'. For 100 ASA film, your camera will probably need to be set around 1600-3200 ASA. (The difference in setting compensates for the difference of viewing with the focusing light and exposing with the flash.) Once the correct ASA setting for your camera/lens has been established, any other slide to be copied will be correctly exposed using TTL metering.

NOTE: This will automatically compensate for enlarging, reducing or adding filter.

IMPORTANT: The above system cannot be used with non-automatic extension rings or bellows.

8 Copying 6x6 slides

By changing the 35mm slide carrier (L) to the 6x6 carrier, any 6x6 can be copied on to 35mm. To copy 6x6 slides with a 6x6 camera, an independent camera stand must be used.

Turn the Copytran on end (see inset on front page) and swing out the two feet. Position the Copytran beneath the camera, focus the camera approximately and then utilise the fine focusing movement of the Copytran.

A test film of an average density transparency should be made to establish an exposure for a 1:1 copy.

9 Maintenance

Changing the focusing lamp:

1. Unplug the unit from the power supply.
2. Remove the 2 screws (M) on the top of the lamphouse and remove cover.
3. Remove mirror box cover.
4. Replace the focusing lamp with a Quartz Halogen lamp Ref.No.M35 (12v 20w). (Do not touch lamp glass with your bare fingers.)
5. Replace covers and screws.

Changing the fuse:

This may become necessary when the Copytran is switched on but fails to work. The fuse (N) is located adjacent to the power socket and should be replaced with a 5 amp 20 mm glass cartridge fuse.

If the equipment still fails to work, consult your nearest Bowens dealer or Bowens of London direct.

DANGER HIGH VOLTAGE

Only a qualified engineer should effect an internal repair.

Accessories

Bellows unit
Bracket for Motorised Camera

Code 2053
Code 2054

Spare Parts

Sync lead (coiled) Code 1831
Target transparency Code 2110
Frame carrier with 35mm and 2 1/4" sq.
transparency holders Code 2111
Camera bracket & screw Code 2113
Mains lead Code 5012
Halogen lamp M35 Code 2105



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INITIAL CALIBRATION PROCEDURE FOR BOWENS COPYTRAN:

The Copytran is furnished with an Ektachrome calibration transparency, which should be used for initial set-up and should be retained for reference.

The calibration transparency includes a focusing target, color patches and a grey scale, so it is designed to be useful for determining color filtration packs and exposure, as well as for precise framing. There are radial centering lines on the calibrating transparency and red concentric frame lines marked for various sizes.

Calibrating the Copytran involves the following steps:

1. Making a series of test exposures of the calibrating transparency at 1:1 magnification.
2. Picking out the closest match from your test roll to the calibration transparency.
3. Recreating the conditions under which the best duplicate was produced, aperture, filter pack and power setting and feeding this information in to your camera's meter.

We have made some tests using various films as a duplicating medium which can serve as a starting point.

Please note: These tests were made with a Canon camera and a Canon 50mm Macro lens with life size (1:1) adapter in place. The apertures referred to below are those shown on the lens setting ring and include a bellows factor correction for the adapter. Other Macro lenses may not include this feature, in which case a nominal aperture of f6.3 is suggested.

Kodachrome 25: f11 1A Skylight Filter Low Power Setting

Kodak S0366 (Short Exposure Duplicating Film): f11 2B + 55Y + 5C, High Power

Kodak 5071 Dup Film (not recommended): using modelling lamp for exposure: f8, 2B + 20Y + 35C 1 sec.

To set your camera meter to duplicate the exposure setting do the following:

Put your camera into manual mode

1. Set your shutter speed to the X synch speed you will be using.
2. Set up for stopped-down metering.
3. Adjust the film speed dial (not the shutter speed) until the indicated aperture matches the setting which produced the correctly exposed duplicate.

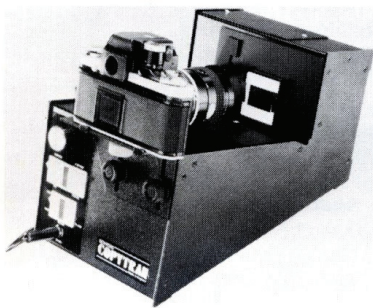
When making future filter changes do not change shutter speed, or film speed setting. Adjust aperture as indicated by the meter.

FIRST LOOK

By Norman Rothschild

BOWENS COPYTRAN

Slide duplicator is both versatile and easy to use



- Slide duplicator; 70x70-mm copying area
- Quartz-halogen focusing lamp
- Daylight-balanced (5,600 K) flash tube; recycling time, two sec
- Ready indicator, high/low flash-intensity settings
- Built-in voltage stabilization
- Slide holders for 6x6-cm and 35-mm transparencies
- Permits enlarging, reducing, cropping, filtering, exposure correction, tilting, superimposing
- Can be used horizontally or vertically

If you are looking for a slide copier with the quality of Bowens Illumitran, but without its price, consider the Copytran. Actually, it has features and a personality quite its own.

As in the Illumitran, the main light source is electronic flash. The "low" flash position gives enough light for use with slow- to medium-speed color-slide or negative films.

The "high" power is advised for use with such slow duplicating films as Ektachrome 5071 or SO366, or for copying very dense originals. If you prefer, you can make exposures on tungsten-type color film, including duplicating stock, using the Copytran's 3,200 K tungsten-halogen focusing lamp.

A test slide is provided to help you arrive at correct exposure. You can find a basis for this by making flash exposures at 1:1 magnification, with stops from the largest to the smallest, and comparing results with the test slide. From then on, math or tables will let you compensate for other image magnifications or for filters.

The test slide also has markings to help you compensate for framing differences between the finder image and the slide-mount format. If your originals are under- or overexposed, you'll have to use judgment to compensate.

I prefer Bowens' alternate method for

arriving at correct flash exposure, using your camera's through-the-lens meter. To proceed, first establish the correct f-stop as outlined above. Set this f-stop on your lens. Now, with the focusing light on and the slide to be copied in place, adjust the ISO film-speed dial until you get the same f-stop reading on your camera. In general, this procedure compensates for differences in slide density, filtration, and image magnification.

Transparencies from 35-mm up to and including 6x7-cm may be copied with the unit. Its magnetic slide holder may be centered for mounting off-center to copy specific areas of an original. The Copytran's filter holder, which mounts below the slide holder, accepts 3x3-in. gelatin, glass, or the new acrylic filters of any make.

Copytran may be used horizontally on a desk or vertically under a copystand. It comes with a universal camera-mounting bracket; an optional bracket is available for use with motor drive.

Price of the duplicator is \$269; the motor-drive bracket is \$11.95. Bogen Photo Corp., 100 So. Van Brunt St., Englewood, N.J. 07631, is the distributor. ●

Quality Duplicating Unit

The new Bowens Copytran has a unique inclined design which allows use on a desk top or copystand

Don Garbera, Editor
Technical Photography

Bowens is well known for its various products that are designed for the photographic industry, in particular the Illumitran Slide Duplicating System. Bogen is now distributing another duplicating unit for Bowens that is less expensive, yet still produces quality. The new Bowens Copytran is approximately 14"x9" and has a unique inclined design which allows you to use it on a desk top or turn the unit on its end for use on a copystand (see Fig. #1).

The slide stage of the Copytran is movable for focus adjustments. A fine focus lever is also included on the left side of the unit. Gels attach via clips to the frame of the light box in back of the slide stage. Slides fit into a holder on the stage and the holder can be adjusted for precise framing of the image because it is held in place by magnetic contact.

The height of the camera body rest is also adjustable to accommodate almost any lens and body combination. The unit is extremely simple to use, the sync cord connector is at the bottom of the control panel located on the left side of the back of the unit, facing the operator. If you're right handed everything is at finger reach.

The user can manipulate a camera with the right hand, and the controls of the Copytran with the left. There is an expose and focus switch also located on the control panel which allows you to preview a slide, as well as an open flash switch.

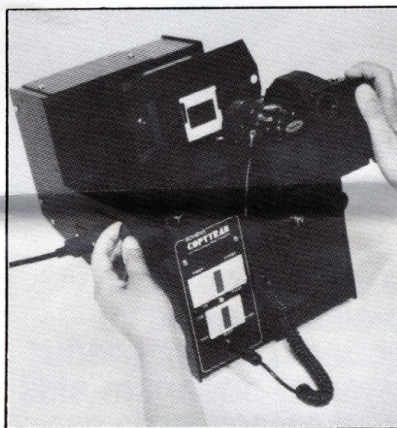
There is also a high and low flash setting (for that extra measure of exposure control required for certain slides). The intensity difference between the two settings is approximately a stop and a half. Also incorporated into the control panel is a flash ready light. The flash has a two-second recycle time at both high and low settings.

The unit comes with a heavy duty AC cord, a heavy duty sync cord, and a universal thread attachment for the camera that fits several slots for right/left camera positioning on the unit.

One minor inconvenience when

using the universal thread attachment screw is that when the camera is unmounted, the screw cannot be reattached. This however, can be remedied by picking up a rubber washer that fits the screw.

Packed with the Copytran is an Initial Calibration Procedure that is quite impressive; it not only gives a



step-by-step guide to the use of the unit, but also gives recommendations for a starting filter pack.

What impressed me the most about the Initial Calibration Guide is that on testing the unit with the filter recommendations for SO-366, I found it to be accurate to within a 5C shift. This shows that a lot of care went into the writing of the technical data for the instrument. By the way, the starting pack recommendations for SO-366 are 2B + 55Y + 5C with flash set on high power. The recommended F stop (which was also found to be quite accurate) is F-11.

I neglected to mention earlier that the unit also comes with a test slide that has color and black-and-white gray scale bars along with numbers and a bull's eye for focusing, and with all attachments for 35mm and 2 1/4 duping.

In conclusion, I found the Copytran unit to be an extremely versatile tool that could be considered an average man's slide duplicator because of its low price.

BOWENS Copytran

The ergonomic slide duplicator

Ergonomic? Something that's designed with human engineering in mind. And that's precisely what the remarkable Bowens Copytran is: designed for easy use.

Manufactured by world-famous Bowens of England, makers of the incomparable Illumitran, the Copytran features a unique, inclined design which lets you use it as a desk top model or turn it on end for use on a conventional copy stand.

The Bowens Copytran lets you make accurate color-corrected copies, crop, make sectional blow-ups, internegatives, double exposures, montages, salvage underexposed and overexposed slides and more. And it's economically priced, too.

And that's not all! Copytran's 70mm square copying area accommodates both 6 x 6 and 35mm mounted transparencies. It's illuminated by a 3200° K Quartz Halogen modelling lamp which allows you to meter individual slides through your SLR camera's lens. The daylight-balanced

electronic flashtube is powered by a dual-range voltage-stabilized supply which recycles in two seconds. The

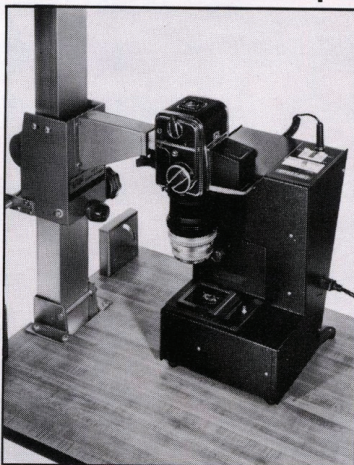
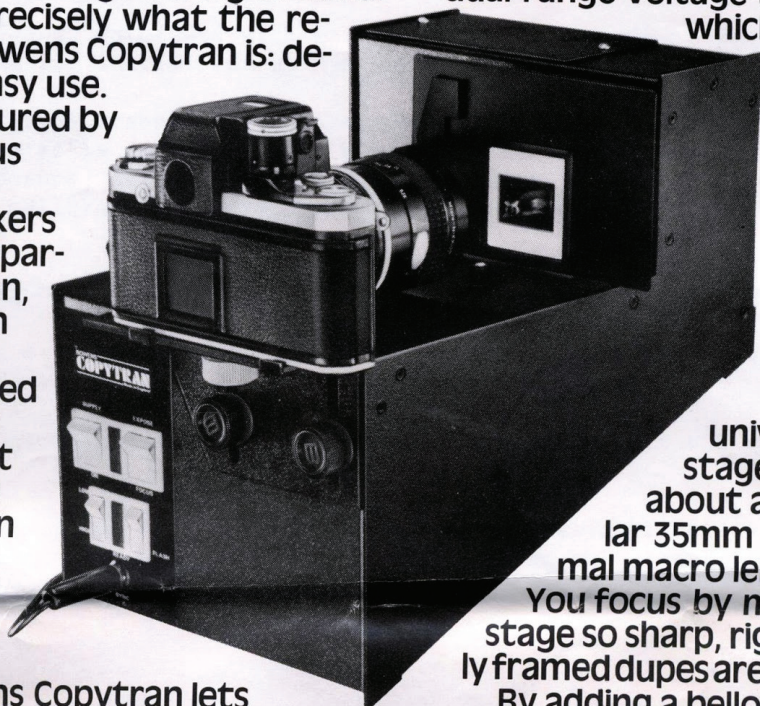
average transparency, when copied, 1 to 1 requires an aperture of approximately f6.3 on Kodak SO 366 Duplicating film.

The Copytran's universal mounting stage will accept just about any of the popular 35mm SLRs with a normal macro lens set for 1 to 1.

You focus by moving the copy stage so sharp, right size, properly framed dupes are easy to achieve.

By adding a bellows or extension tubes and using the Copytran's moveable, magnetic 35mm slide holder you can crop, rotate or make sectional blowups. These are just a few of the

extraordinary features of the Bowens Copytran.



SPECIFICATIONS

Power Consumption: 115 Volts, 60 Hz, 1 Amp.

Dimensions: Horizontal working position: Height 8 in., width 8¼ in., Length 14½ in.

Vertical working position: Height 14½ in., width 8¼ in., length 8 in.

Controls: Power On/Off, High/Low Power Output, Focus/Expose

Bowens Copytran:

Order Code 0100

Mounting Bracket: (optional) for most 35mm motor drives and auto winders

Order Code 0111

Lester Bogen doesn't sell anything he wouldn't buy himself.

bogen
PHOTO CORP.

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