ZOOM DUPLIVAR™

DUPLICATOR FOR 35MM
SLR CAMERAS

AN ACCURA T SYSTEM ACCESSORY

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CREATIVE SLIDE DUPLICATING
WITH THE
ACCURA 2:1 ZOOM-DUPLIVAR™

The Accura ZOOM-DUPLIVAR is a variable magnification duplicator for most 35mm SLR cameras, with its own complete self-contained optics mounted in a calibrated helical mount to provide a zoom magnification range from 1:1 to 2:1.

It is not only a most convenient device for making copies of your slides, or color and black & white negatives, but is also a creative tool which enables the photographer to continue the photographic process beyond the original camera exposure. The Accura ZOOM-DUPLIVAR thus opens up a whole new world of “re-photography” by selectively enlarging (cropping) the original slide, by introducing color changes through the use of filters, by the multiple exposing and combining of several images and by means of many other techniques which the imaginative photographer will devise.
The Accura ZOOM-DUPLIVAR uses the popular "T" system of camera fittings. This permits the unit to be used with virtually all 35 mm SLR cameras with focal plane shutters. Screw the appropriate "T" adapter onto the Accura ZOOM-DUPLIVAR and mount the unit to the camera in the usual manner. By loosening the three small setscrews in the "T" adapter, the Accura ZOOM-DUPLIVAR may be oriented so that the scale markings are upright and centered.

ZOOMING FOR THE DESIRED COMPOSITION
The calibrated zoom ring indicates the magnification from the full scale (1:1) setting of 1.0 to the maximum magnification (2:1) at the 2.0 setting.
CORRECT FOCUS IS ALWAYS AUTOMATIC.
For full scale, no cropping reproduction set the zoom ring to 1.0. Crop to any desired composition by turning the zoom ring.

THE SLIDE AND FILTER STAGE
The front end of the Accura ZOOM-DUPLIVAR is a double channel stage. The inner channel accommodates 2X2" slide mounts. A white positioning dot quickly centers the slide over the shooting aperture. The outer channel accepts standard series VII filters or gelatins cut to fit. The front diffuser plate is hinged and swings open.
to facilitate positioning of the slide. The entire stage slides up and down and may also be rotated by loosening the setscrew located immediately behind the stage. This permits the centering of any part of the original slide being photographed.

THE SLR VIEWFINDER

In most SLR cameras, the mirror is not large enough to reflect the whole subject onto the viewing screen when long telephoto lenses, tubes, bellows or special devices such as the Accura ZOOM-DUPLIVAR are used. This results in a black-out along the entire upper edge of the viewing screen which is actually the image of the end of the mirror. This is a limitation of the mirror-viewfinding system and in no way indicates any improper functioning of the Accura ZOOM-DUPLIVAR. The image recorded on the film will be complete and free of cut-off. While actual cropping and exact composing may be limited to the bottom and both sides, you will be able to judge quite accurately the upper limit as well. If the upper edge is critical as
far as composition is concerned, place the slide upside down, or rotate the stage 180° so that the edge will be visible in the bottom of the viewing screen.

Just as the microgrid and rangefinder prisms do not operate with long telephotos and bellows extensions, they also do not function with the Accura ZOOM-DUPLIVAR. Thus, half the rangefinder prism will be blacked out and the microgrid pattern will not clear even though the image is critically in focus.

LIGHTING
In actual use, the Accura ZOOM-DUPLIVAR is pointed towards the light. The diffusion screen should be in the closed position over the slide. Generally, the unit is lined up squarely with the light source, although it may be advisable at times, such as when the light is too strong, or if a hot spot results, to direct the light at a diffused white surface placed at 45 degrees to the Accura ZOOM-DUPLIVAR.

CHOICE OF LIGHT SOURCE
Almost any light source may be used successfully to make black & white negatives from color slides. To make color dupes, the color quality of the light must be correct for the kind of film being used, as illustrated in this table.
All Daylight Films: use Daylight, or Electronic flash (+81A filter—optional)

For TypeA Films: use photofloods and no filter * or 3200° K Lamps +82A Filter

For TypeB Films: use 3200° K Lamps and no filter * or photoflood Lamps +81A Filter

Daylight color film with an electronic flash as the light source is recommended as the easiest-to-use combination, since electronic flash does not increase contrast or introduce color shift, nor does it buckle or heat-damage the slides. Its rapid flash also eliminates the danger of blur due to camera vibration.

* Use 3200° K lamps in preference to photofloods. They have longer life, more even light output and more constant color quality than photofloods.

CHOICE OF FILM

Any color film can be used for duplicating color slides—yet, each particular type of film has its own unique qualities which should be considered in terms of the desired result. The light source, of course, must match the color balance of the film, either directly or in conjunction with the appropriate filters.

The most accurate duplicate is achieved with the special duplicating color emulsions such as those made by GAF, Agfa and others. These films have special low contrast characteristics to counteract the tendency towards increased contrast in the duplicating process.

If you wish to use regular color films, the following considerations should determine your selection.
Kodachrome II is recommended for use with original slides which are low in contrast. Ektachrome X for normal contrast originals. To arrive at the combination of film and light source best suited for your particular type of work, some experimenting will be found advisable.

Select one or several brands of your choice of color film and duplicate three test slides which represent low, normal and high contrast originals.

EXPOSURE
The following tables offer EXPOSURE SUGGESTIONS for a number of films and light sources. Since individual conditions vary considerably—type of slide, personal taste, processing, shutter efficiency, etc.

If your results are consistently too light, decrease your exposure; if too dark, increase your exposure. In making tests, use several exposures, some more, some less, some at the estimated correct exposure setting. Using a 500 watt lamp placed 6 inches from the front of the Accura ZOOM-DUPLIVAR, use the following guide for your initial exposure tests.

<table>
<thead>
<tr>
<th>ASA Film Speed</th>
<th>Shutter Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1/4 second</td>
</tr>
<tr>
<td>25</td>
<td>1/15</td>
</tr>
<tr>
<td>40</td>
<td>1/25</td>
</tr>
<tr>
<td>125</td>
<td>1/30</td>
</tr>
</tbody>
</table>

Using a 40 watt-second electronic flash unit, with an ASA film speed of 125, try a light-to-duplicator dis-
tance of 12 inches. With ASA 64 film, try a light-distance of 9 inches.

Using GAF Duplicating type 547 (approximately ASA 25) use a #211 enlarging lamp at a distance of 9 inches and 1 second exposure time. No balancing filter is required.

Behind the lens metering systems may be used if a constant light source of sufficient intensity is utilized to activate the meter. Since there is no variable diaphragm or meter coupling on the Accura ZOOM-DUPLIVAR, consult your camera manual on the use of the stop-down metering method. Exposure will be controlled by the choice of shutter speed and light-to-slide distance.

Since the meter is measuring the light at a small effective f value, some error in meter function may occur. This error will be a constant one and can be evaluated after your first roll. It is then readily compensated for by altering your ASA speed. Use a higher ASA value if your results are overexposed; a lower ASA value if results are underexposed.

**USE OF FILTERS—COLOR**

Filters are often required to correct light sources so that they will be in proper color balance for the type of film being used. These should be placed IN FRONT of the slide to be copied, between the light and the slide. Series 7 filters fit directly and are simply placed in the filter channel in front of the Accura ZOOM-DUPLIVAR. Filters may also be used to create artistic effects, to alter color
for "correction" of faults, etc. Thus, a bluish filter (such as an 82A or others of the 82 series) may be used to cool an overly reddish slide; a yellowish filter (such as an 81C or others of the 81 series) may be used to reduce excessive bluishness.

Also, GAF and Kodak offer color compensating filters which come in several rather pale densities of yellow, cyan and magenta and may be bought in gelatine form (2X2" and larger) for economy. Most filters require an increase in exposure—consult the filter manufacturer’s instructions for details. The use of filters for creative work is limited only by your imagination, but should be based on extensive experimentation.

MAKING A COPYING SETUP
While it is entirely possible to make an occasional duplicate slide by hand-holding a camera with an Accura ZOOM-DUPLIVAR and pointing it towards a light source, this method is not conducive to reliable results.

Some sort of permanent or semipermanent setup in which conditions, such as light-to-slide distance can be kept constant, is necessary for consistently good results.

Mounting the camera on a stand, preferably a copying stand with the light source placed on the baseboard, offers a suitable arrangement for working with the Accura ZOOM-DUPLIVAR.

Records should be kept of lamp-to-slide distance, exposure, processing procedure, etc.

WARRANTY
The Accura ZOOM-DUPLIVAR has been inspected before
shipment by the factory and will yield satisfactory results when correctly used. It is guaranteed against all defects in labor and materials for a period of one year and will be serviced free of charge (except for transportation costs) should, with normal usage, any defects develop during this warranty period. Servicing must be arranged through the dealer from whom the unit was purchased; if sent to Accura for servicing, a copy of the sales receipt must be enclosed to validate the warranty.