

how to use your Honeywell Repronar Model 805

Page The Repronar 805 Description 2 Operation of the Repronar 805 Preparation 5 Loading the Film...... 6 7 Unloading the Film...... Inserting the Filters......... Recommended Film Settings..... How to Use the Repronar as a Tool..... Duplicate Color Slides...... Crop and Enlarge..... Reduce 21/4" Square 12 Correct Underexposure Correct Overexposure 13 Correct Color Balance Add Color Tint..... Contrast Control Dodging Vignette 17 Montages Textures Tilts Sandwich Effects Double-Multiple Exposures Open Flash 21 Frame with a Mask..... Black and White Films..... 24 Care of the Repronar 805.....

Contents

the Repronar 805

Description

The Honeywell Repronar 805 is an easy-to-use 35mm slide duplicator and much, much more. It offers exciting creative possibilities ranging all the way from captioning and cropping to color enhancement and avant-garde superimpositions. Color shifts and disappointing exposures are often easily remedied. Besides permitting more control over final results, using the Repronar is normally much faster and more economical than having an outside laboratory make the duplicates. With imaginative application, the Honeywell Repronar can easily become the most useful photographic tool in the laboratory, studio, home or office.

The Repronar consists of a special purpose camera, an easel with slide and filter holders, and an electronic-flash light source with high and low output control, an incandescent light source for viewing the transparency copies, and an adjustable Exposure Calculator.

The special purpose 35mm camera is a single-lens reflex type with a high quality f/4 Takumar preset copy lens designed specifically for this application. It features a rapid film advance lever and film rewind crank. A shutter-cocking device permits multiple exposures. Both the camera and the lens carriage move smoothly on a helical rack to vary the magnification and to achieve sharp focusing. A ground glass permits direct viewing for composition, and a magnifier lens assures critical focusing for sharp, clear copies. Extension bellows adjust for copies of any degree of magnification from 4X enlargement to 1/2 X reduction of the original color transparency.

An adjustable Exposure Calculator indicates the proper exposure for the magnification selected. Exposure will depend on two variables, the aperture selected, and the position of the power switch. The built-in electronic flash unit has a high-low switch in the base which permits a 4X light ratio.

When set at the LOW position, the power output will be the same as the previous models. When the switch is set at HIGH, you will have four times (two f/stops) the amount of light at your disposal. The selection of the proper aperture for a particular film when exposing at a certain magnification is simplified with the use of the Exposure Calculator.

Accessories to be made available will be the bulk load film magazine, a motor drive assembly, an easel for the making of film strips and an easel for the copying of film strips.

Completing the copy setup is an easel for positioning transparencies to be copied, and a view light for illuminating them while composing and focusing.

With the Repronar, the color photographer has, for the first time, the opportunity of experimenting, in color to achieve better pictures. A partial list of the processes which can be performed with the Repronar follows:

Duplicate color slides

Crop and enlarge

Enlarge 16mm movie frames to 35mm

Enlarge 35mm stereo

frames to 35mm

Reduce 21/4 -inch slides to 35mm

Correct underexposure

Correct slight overexposure

Correct color balance

Correct "distortion"

Add or subtract overall color

Frame with masks

Dodge for exposure control

Experiment with vignettes

Create montages

Tilt for composition

Improve portraits

Add textures and screens

Create titles

Create sandwich effects

Produce filmstrips

Duplicate filmstrips

Produce black-and-white negatives from color slides

Produce color negatives from color slides

Produce black-and-white slides from negatives or color slides

To prepare the Repronar 805 for use, set it on a table with the camera's ground glass viewer approximately at eye level. Be sure that the shutter knob (32) is in "I" position. If not, pull the knob toward you, rotate it to align the "I" and the black line and then release the knob.

If the outlet to be used provides 110-125 vac, the Repronar may be plugged in. If the voltage is different, refer to the label on the base of the Repronar for wiring changes before plugging in the power cord.

Operation of the Repronar Model 805

Preparation

NOTE

Before starting your reading, remove and unfold the Repronar Nomenclature from the back flap of this booklet. The Nomenclature is your guide to all of the parts of the Repronar which are identified by number in the text.

Loading the Film

Follow the simple steps outlined below:

- 1. Pull the camera case latch (4) forward and remove the back of the camera.
- Pull out the rewind knob (59) and insert the film cassette in the cassette chamber. Push in the rewind knob. Draw out the film leader and insert it in the slit of the takeup spool. Note that the film is wound under the takeup spool, and not over as in some 35mm cameras.
- 3. Make sure the double exposure button (49) is pushed to the left.
- 4. Turn the film advance lever (24) until the sprockets (62) engage the perforations in the film.
- 5. Close camera case and fasten the latch.
- 6. Before advancing the film again, slowly turn the rewind knob clockwise until a slight resistance is felt. This prevents loosening of the film in the cassette.



- 7. Turn the film advance lever a full stroke and trip the shutter, watching the rewind knob. Repeat. The rewind knob should turn counter-clockwise, indicating that the film is moving from the cassette to the takeup spool.
- 8. Set the film index window (34) at the proper number for the film. Refer to the table on page 9 for this number. If the film loaded is one that requires filtering, pull out the filter compartment (16) and place the appropriate filter on the glass. The table on page 9 also gives the filter requirements for each film, if any.

9. Advance the film a third time. The exposure counter (48) will show #1. The Repronar is now ready for the first exposure.

Follow the simple steps outlined below:

- 1. Set the on-off switch (15) in on position.
- 2. Push the *flash-view* switch (13) to *view* position.
- Be sure the film has been advanced and the shutter cocked before focusing and composing the transparency.
- Open the diaphragm for maximum illumination on the ground glass viewer by setting the aperture selector (18) to f/4.
- 5. Place the positive transparency, with emulsion or dull side down, in the slide holder (42 or 55) on the easel. The transparency, properly placed in the slide holder, will appear as originally taken. Color or blackand-white *negatives* should be placed in the slide holder with dull (emulsion) side up.
- Loosen the lens carriage locking screw (29) and align the lens carriage pointer (28) with the desired magnification on the lower magnification scale (44). Tighten the locking screw.
- 7. Loosen the camera carriage locking lever (5) and rotate the camera travel knob (6) to bring the camera carriage pointer (31) to the same indication on the upper magnification scale (47). The camera is now roughly focused, use the magnifier (1) and camera carriage travel knob (7) for sharp focusing. Then tighten the camera carriage locking lever (5).
- Compose the copy by moving the slide holder on the easel.
- Increase or decrease the magnification if desired by repeating steps 6 through 8.
 Tighten the camera carriage locking lever.
- Read the proper f/stop on the camera aperture bar (45). Set the diaphragm ring (20) to the proper f/stop. Then move the

Operating Sequence

aperture selector (18) from right (f/4) to the left until a resistance is felt. This two step aperture control allows the operator to reopen the diaphragm for a focus or position check using the aperture selector, then close back down without taking his eye away from the ground glass. The filters recommended for color films were considered in calibration of the exposure scale and additional compensation is not necessary.

- 11. Push the flash-view switch to flash.
- 12. Depress the shutter release (23).
- 13. Turn the film advance lever (24) a full stroke to advance the film and cock the shutter for the next exposure.

Unloading the Film

- After the final exposure has been made, the film advance lever will not make a full stroke. Don't force the advance lever or the film will be pulled out of the cassette.
- Depress the film rewind release button (41) and unfold the rewind crank (3) to wind the film back into the cassette. Turn the rewind crank at a smooth, even rate — not too rapidly.
- Continue turning the rewind crank until you feel the tension release as the end of the film slips off the takeup spool. The crank then turns freely.
- Remove the camera back, pull out the film rewind knob, and remove the cassette of exposed film.

Inserting the Filters

The proper use of filters is important in the Repronar system. Previous models of the Repronar were supplied with two glass filters. These were UV-17 and the 81A filters. Because of changes in films, these filters are no longer sufficient to cover the large selection of films that are presently available. For this reason we are no longer supplying filters. Suggested starting points for filtration are given in the following table. Light Balancing

gelatin filters which can be purchased in 3" squares from firms such as Eastman Kodak can be inserted into the filter holder. Use the filters of your choice together with the clear glass filter in the filter holder.

| Film | Power Posi- tion | Film Value | Filtration Starting Point |
|--|------------------------|---------------|---------------------------------|
| Kodachrome II | LO | 14 | 81EF |
| Kodachrome X | LO | 20* | 81B |
| Ektachrome X | LO | 20 | 2B |
| High Speed Ektachrome | LO | 20** | 81EF & 81C |
| Agfachrome | LO | 16 | 81B |
| Ansco Dupe Film #5470 | LO HI | 6 14 | 85N3 |
| Kodacolor X | LO | 14 | None |
| Ektacolor S Kodak Panatomic X (Neg.) | LO LO | 18 18 | None None |
| Kodak Panatomic X (Pos.) | LO | 20 | None |
| Kodak High Contrast Copy For Making Positives From Negatives | LO | 16 | None |
| Ansco Versapan | LO | 20 | None |

Each Film Value represents 1/4 f/stop. Therefore, the difference between LO and HI is equal to 2 full f/stops, or 8 quarter stops (Film Values). Film will vary in color balance and speed from one emulsion batch to another. Slight color shifts are also experienced because of processing differences between processing labs. Day-to-day variations also can be experienced within the same lab. Since there are so many variables, these film values and suggested filters should be regarded as starting points. If exposures or colors are consistently off in the same direction, appropriate adjustments should be made.

Recommended **Repronar Settings** for Various Films

^{*}close down 1/2 stop more than indicated on the camera aperture bar (45), *close down 1 stop more than indicated on the camera aperture bar (45).

How to Use the Repronar as a Photographic Tool

Using the Repronar as a photographic tool offers endless possibilities in achieving spectacular and interesting effects. The techniques listed on page 3 are explained here; others will be found through working with the Repronar.

Duplicate Color Slides

To make a 1:1 duplicate from a color slide, set the lens carriage pointer opposite "1" on the lower magnification scale (44) and frame the image in the ground glass viewer. The viewer shows the image that will appear on the film; there is no need to allow any extra space for the original mount or border that might spoil the picture. Frame the image in the viewer so that the border or mount is not visible. If the original transparency appears to be of normal exposure, use the f/stop indicated on the Exposure Calculator. If the original appears to be underexposed, to obtain a similarly underexposed copy open the diaphragm one f/stop for each apparent f/stop of underexposure. If the original appears to be overexposed, to obtain a similarly overexposed copy close the diaphragm one f/stop for each apparent f/stop of overexposure. You must make additional compensation if the exposure

is to be corrected. The procedures for correcting over and underexposure are explained on pages 12 and 13.

Cropping and enlarging may strengthen and greatly improve the composition of a transparency. This techniques also eliminates distracting or undesirable areas from a photo. In addition to enlarging a portion of a transparency, you may enlarge a 35mm stereo frame or a frame of 16mm movie film to 35mm. Use a magnifying glass to help select a 16mm frame that is clear and sharp, suitable for copying.

The Repronar permits enlargements up to 4 times the original copy size. Select the magnification which suits your purpose. Try some portraits, too; or the enlargement like the one on this page which was made from the original above. The quality of enlargements in general depends upon the sharpness, film grain, and other qualities of the original copy. For best results, make enlargements from originals that are of good quality. An enlargement of 4X magnification requires an original transparency of excellent quality.

Crop and Enlarge





Reduce 2¼" Slides to 35mm

Set the lens carriage pointer opposite $\frac{1}{2}$ on the Exposure Calculator to reduce a transparency made on $\frac{21}{4}$ by $\frac{21}{4}$ -inch film to 35mm. Then adjust the degree of reduction as you select a horizontal or vertical format for the copy.



Correct Underexposure



Under "Duplicate Color Slides" it was recommended that the diaphragm be opened one f/stop for each apparent f/stop of original underexposure when copying an underexposed original. To correct an underexposed original, open an additional f/stop for each apparent f/stop of underexposure. The rule then for correction is "estimate the number of f/stops of original underexposure and open up twice as many f/stops when making the corrected copy."

Example: The original appears to be one f/stop underexposed; the Exposure Calculator reads f/11 for a normal exposure. To copy: set the aperture selector at f/8. To correct: set the aperture selector at f/5.6.

If the original is unusually dark, bracket the estimated exposure by one or two f/stops in each direction. If exposure beyond f/3.5 is required, remember that you may repeat the exposure one or more times. In the above example, you could have used an aperture setting of f/11. Two exposures at f/11 would equal f/8, or four exposures at f/11 would equal f/5.6.

You may also use the open flash technique to correct underexposure (see page 21).

Under "Duplicate Color Slides" it was recommended that the diaphragm be closed one f/stop for each apparent f/stop of original overexposure when copying an overexposed original. To correct an overexposed original stop down an additional f/stop for each apparent f/stop of overexposure. The rule then for correction is "estimate the number of f/stops of original overexposure and stop down twice as many f/stops when making the corrected copy."

Example: The original appears to be one f/stop overexposed; the Exposure Calculator reads f/11 for a normal exposure. To copy: set the aperture selector at f/16. To correct: set the aperture selector at f/22.

If the original is more than one f/stop overexposed, the resulting copy may appear muddy — there is too little color in the original to make a satisfactory copy. However, filters added to the overexposed originals may produce some unusual pictures. Use an orange filter, for example, to make a sunset effect when copying an overexposed, mid-day photograph. When using an additional filter, consider the filter factor in determining the f/stop. A filter with a factor of 4, for example, effectively reduces the exposure by 2 f/stops.

Correct Overexposure

Color Balance and Correction



Warm Color Balance exposed with 20Y filter



Normal Color Balance exposed without extra filters



Cool Color Balance exposed with 10M and 10C filters

Incorrect color balance in the original can be greatly improved in the duplicate by careful use of a 3" by 3" gelatin color compensating filter set. These filters are colored cyan, magenta or yellow and each is numbered and lettered to indicate its color and strength. A 30C filter, for example, is very cyan while, a 5Y is faintly yellow. A good kit consists of a 5C, 10C, 20C, 30C, 5M, 10M, 20M, 30M, 5Y, 10Y, 20Y and 30Y filters. The chart below shows just the basic colors that can be created using this kit. Many more hues and tones are possible.

When using these filters, remember that they are in addition to the basic filters that your film may require, as specified on page 9.

ADDING COLOR

| To add: use: |
|--------------|
|--------------|

Red Yellow and Magenta filters
Green Yellow and Cyan filters
Blue Magenta and Cyan filters

Yellow Yellow filters
Cyan Cyan filters
Magenta Magenta filters

REMOVING COLORS

To remove: use:

Red Cyan filters
Green Magenta filters
Blue Yellow filters

Yellow Magenta and Cyan filters
Cyan Yellow and Magenta filters
Magenta Yellow and Cyan filters

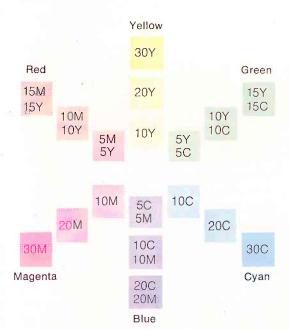
To add a particular color, use a similarly colored filter or combination. To remove a color, the complementary color filter or combination is used, as seen on the chart.

The chart or the instructions above tell which filters to use for a particular effect, but not how much. Since the stronger filters have more effect, you might use a 20M and 20C combination to correct a very yellow original. But to add a slight reddish color to another transparency, you might try a 5Y and 5M combination. Since color is often a matter of personal preference and the "best" overall color may vary with the subject matter, it's wise to

make a visual check, using the viewing light and look at the effects of several combinations.

When adding color compensation filters, the exposures must be increased by one f/stop for every 30 units of filtration added. If a 20Y and 20C combination is used, open the diaphragm 1 1/3 stops more than indicated on the exposure scale. If a 10M and 10C combination is used, the normal exposure should be increased by 2/3 of a stop. A 30Y requires one extra f/stop of exposure. The exposure adjustment required by the filters is determined by adding up their numbers, and has nothing to do with the colors used.

As you become familiar with the results of these filter combinations, your demands may become more precise. Mixing various strengths of these filters puts the full spectrum at your disposal. However, to get very exacting results, an extremely consistent processing lab must be used, and film from the same emulsion batches should be used whenever possible, too.





Magenta colored original, loosely cropped and underexposed.



Duplicate made with 20Y and 20C fillters, cropped tighter and exposure opened up two stops past indicated f/stop to compensate for filters and correct underexposure.

Add Overall Color Tint





Contrast Control



Original transparencies are often enhanced by the addition of colored filters. Try adding a blue filter to a picture of a snow scene. Use a blue filter also to create a moonlight effect. Add red or orange to a sunset for more intense colors. Be sure to consider the filter factor and compensate in the exposure when introducing filters into the Repronar system.

There is a tendency for duplicates to have slightly more contrast than the original. Using higher contrast films, such as Kodachrome II, emphasizes this effect somewhat. Underexposing and overdeveloping the film boosts contrast noticeably, depending on the amount of underexposure and overdevelopment. Check with your processing lab to find out which films he can overdevelop. To reduce contrast, overexpose the film and have it underdeveloped. Here again, ask your processing lab which films he can underdevelop. Increasing and reducing contrast by these methods may require additional filtering to offset color shifts in the processing. This depends on the film used, the processing lab and the amounts of exposure and development variance. For predictable results, records should be kept each time this is done.

The technique of dodging permits control of the exposure of certain areas within a transparency. Hold the dodge up near the lens and out of focus to eliminate an area of the original from the copy. In the same manner, but using the multiple exposure technique, dodge an area while the remainder is given additional exposure (see page 20 for multiple exposure).

Use a vignette to transform a cluttered picture into an interesting or dramatic portrait. Or, combine two or more vignetted pictures onto one transparency using the multiple-exposure technique on page 20. As a rule, make a vignette to suit the original transparency and the result desired, and hold the vignette near the lens to be out of focus. For a multiple-exposure montage, arrange the copy by marking lightly with a grease pencil on the ground glass viewer. This will prevent overlapping or crowding as the exposures are made.

To obtain the effect shown in the portrait, use a mask made of zinc oxide on a square of clear acetate film or clear glass. Coat one side of the acetate with the ointment; then wipe the center clear except for a thin film. The lightly-coated center serves as a diffusing filter; the heavier-coated area as a vignette. When using a vignette of this type, be sure to check the focus with the vignette in place. Then stop down to the indicated f/stop to see the actual effect in the ground glass viewer. When using an opaque, colored vignette, position it on supports. Set the I-B Selector on "B". Depress the shutter release (the electronic flash exposes the transparency) and hold it for sufficient time to permit the room light to expose the colored vignette.

A vignette made of zinc oxide on a clear acetate film was held up near the lens and out of focus to produce this subtle portrait.

Dodge for Exposure Control

Experiment With Vignettes



