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Reel 3-D Enterprises' Guide to the Nimslo 3D Camera



INCLUDING:

- NIMSLO HISTORY
- LENTICULAR 3-D PRINT TIPS
- MAKING & VIEWING 3-D SLIDES
- MAKING ANTIQUE STYLE STEREO CARDS
- CLOSE-UPS WITH THE NIMSLO
- OTHER USES FOR THE NIMSLO CAMERA
- NIMSLO CAMERA MODIFICATIONS
- AND MORE

BY DAVID STARKMAN
& SUSAN PINSKY

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DEDICATED TO William Gruber, Karl Kurz, Seton Rochwite, & Gordon Smith.
— They all had Stereoscopic Visions, and their inventions have brought endless
hours of pleasure to countless millions.



Allen K. Lo

Allen K. Lo *Dr. Jerry C. Nims*
From the 1980 Photokina press packet which introduced
the Nimslo 3D Camera concept. Nims and Lo are the
inventors of the camera and the basis for its unusual
name: "Nims/Lo".

Dr. Jerry C. Nims

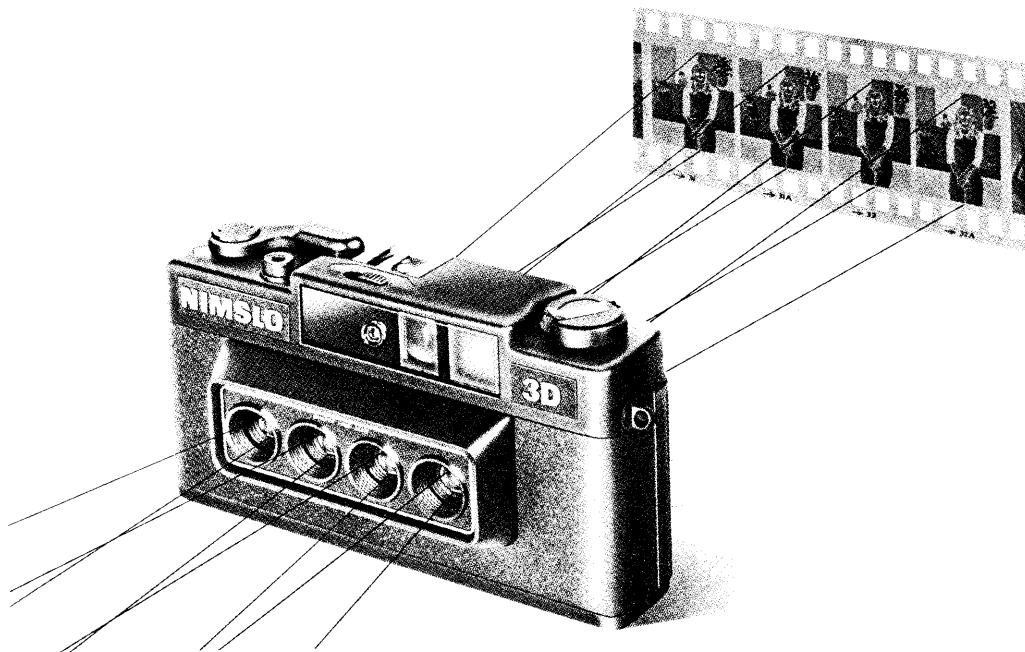
This book would not have been possible without the help and support of many individuals. *Special Thanks to:* Leroy Barco, John Dennis, Bill Duggan, Mel Gerson, Masahiko Kawamura, Mel Lawson APSA, James Lucas, Carla Malden, Paul Milligan, Cami Malden Starkman, Nancy Starkman, Michael Starks, Paul Wing APSA, Harry zur Kleinsmiede, and especially to David Burder FRPS for his invaluable editorial assistance and numerous helpful suggestions.

INTRODUCTION

The dream of producing a three dimensional picture that can be viewed directly without any special viewer or 3-D glasses has existed since the beginning of stereo photography in the late 1830's. As early as 1872 H. Swan described and created a device he called the "Crystal Cube", which first made this possible. (An original example of this can be seen in the Science Museum in London, England.) The cube made use of a stereo pair and two right-angled glass prisms. When an observer looked at the cube from exactly the correct position a 3-D image could be seen.

The next development was a *flat print 3-D image* that could be viewed directly without any special viewing aid. The first major patent application for such prints was by F.E. Ives in 1902. This type of print was called a "parallax stereogram". During this century several others have made significant contributions in this field. Some were by H.E. Ives (F.E. Ives son, 1928-1933), G. Lippman (1908), W. Hess (1912), C.W. Kanolt (1918), Dr. Estanave and J. Zafirovko (1933), Maurice Bonnet (1935) and Douglas Winnek (1948). More information on this subject is covered in chapter 17 of the book "Stereoscopic Photography" by Arthur W. Judge (London, 1950).

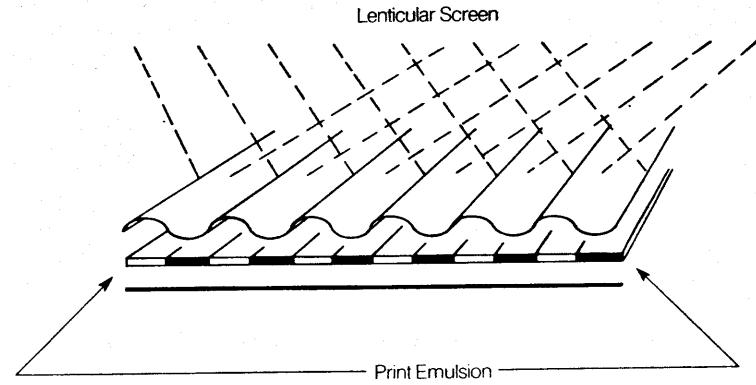
In early 1982 the four-lensed Nimslo 35mm 3D Camera was introduced. It provided an easy-to-use camera yielding three dimensional prints (like the plastic 3-D postcards found at souvenir shops) that could be viewed without a viewer or 3-D glasses. Previous lenticular systems were designed strictly for commercial applications, and were not suitable for amateur use. In many cases the equipment was custom built, and prints were only available by hiring the company which owned the equipment to do a custom job.



The Nimslo is a simple four-lensed 3-D camera creating four images. All of the sophisticated technical work is done by the Nimslo-licensed processing lab. Using a special 3-D printing system the four negatives are combined onto a photosensitive material coated with a plastic lenticular sheet. For the first time, Nimslo has made lenticular 3-D prints available to the amateur snapshooter.

In order to create the Nimslo 3-D print, the images from the four lenses (now 4 negatives) are optically sliced into hair thin strips, alternating under the lenticular ridges on the surface of the print. Each ridge is a long cylindrical lens, and serves the purpose of channeling and recomposing the images at different angles, such that the right eye and left eye are always seeing two *slightly different views*. This is the basic principle of 3-D photography, and why all traditional methods of presenting 3-D use *two images—one for the right eye, and one for the left eye*.

By 1986, Nimslo had failed to capture a sufficiently large market, and had already halted camera production. In 1988 the special lenticular 3-D print processing service was taken over by: **The Nissei Corporation, 3 Sunset Way, Building E, Henderson, Nevada 89014, Phone (702) 451-7005.** They were then honoring the old Nimslo prepaid processing mailers. Film sent to any of the old Nimslo lab addresses may be delayed or returned.



The remaining stock of original Nimslo cameras have been selling new for \$30–50.00, considerably less than their original \$259.00 price. The best sources for these are the mail order camera dealers which run ads in the popular photography magazines. This could be considered a real bargain by both the beginning and experienced 3-D photographer if you consider the alternate 3-D uses that the camera may be put to. We will explore these possibilities more later.

THE NISSEI/NISHIKA* 3D CAMERA

As of July 1988 the Nissei Corp., the only company offering lenticular print processing for the Nimslo camera, has announced that they will be introducing their own four lensed camera called the "Nishika". Indications are that it will have identical lens spacing and negative format as the Nimslo. We have heard unofficially that it will have some plus and minus adjustment on the automatic exposure, and will run off 2 AA batteries. It may also have an enlargeable film chamber to take a special larger load 35mm film cassette, allowing more shots per roll. There's also talk of a more powerful dedicated flash unit.

Any applications in this book that apply to the Nimslo camera should apply equally well to the Nishika 3-D camera.

*Nissei and Nishika are trademarks of The Nissei Corporation

DESCRIPTION OF CAMERA

The Nimslo 3D Camera uses standard 35mm film in either ASA 100 or ASA 400 speeds. **Print film must be used for the Nimslo/Nissei prints, but slide film can be used for creating stereo pairs for 3-D slides** (see Slide Taking Section, Page 12).

The exposure is fully automatic, electronically programmed to select speeds from 1/30 to 1/500 second, with apertures from f/5.6 to f/22. A green LED (light emitting diode) in the viewfinder indicates sufficient light; red gives low light warning for slow shutter speed and underexposure.

Four images are exposed simultaneously side-by-side. Negative size is vertical, 22mm × 18mm.

SPECIFICATIONS

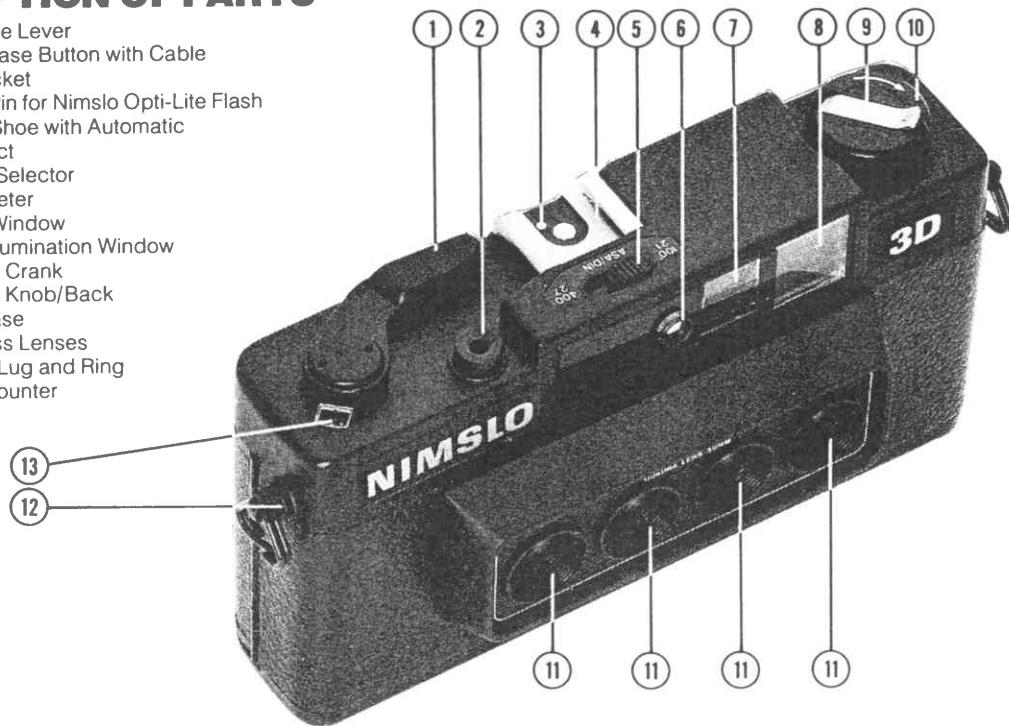
Camera Type:	35mm, Automatic 3-Dimensional
Film Size/Type:	35mm
Film Speeds:	ASA 100/DIN 21 ASA 400/DIN 27
Shutter:	Automatic, Electronically Programmed Speeds from 1/30 to 1/500 Second
Lenses:	Quadra Lens System: Four 30mm, f/5.6, Air Spaced Triplets, with Coated, High-Index, Optical Glass Elements Pre-focused 6' (2m) to infinity
Flash	
Synchronization:	Dedicated Hot Shoe Contact for Cordless Flash Connection to Nimslo Opti-Lite Electronic Flash (Other Types of Flash Units May Be Used)
Viewfinder:	Bright Frame, Vertical Format
Information:	Green LED sufficient light and battery OK condition; Red LED low light warning.
Film Advance:	Single-Stroke Film Advance Lever
Exposure Counter:	Automatic Reset
Film Rewind:	Rewind Crank lifts clear from body
Exposure Control:	CdS Cell measures light to program shutter speed and aperture size for best combination to achieve correctly exposed negatives
Power Source:	Three (3) No. 386 Eveready or Duracell, Silver Oxide Batteries. Equivalent batteries are: Maxell SR 43W, Panasonic WL11 and Ray-O-Vac RW24/44
Other Features:	Built-in Double Exposure Prevention
Dimensions:	5 $\frac{3}{8}$ " x 2 $\frac{7}{8}$ " x 1 $\frac{1}{8}$ "
Weight:	12 ounces

The camera is powered by three No. 386 Eveready or Duracell Silver Oxide batteries. **The camera will not operate without batteries.** (Note that without batteries, or with weak batteries, it still *sounds* like the shutter is firing, when, in fact, it is not! When the batteries are weak the red or green LED's also appear dimmer than normal.) **Do not use the camera unless the LED is visible in the viewfinder.**

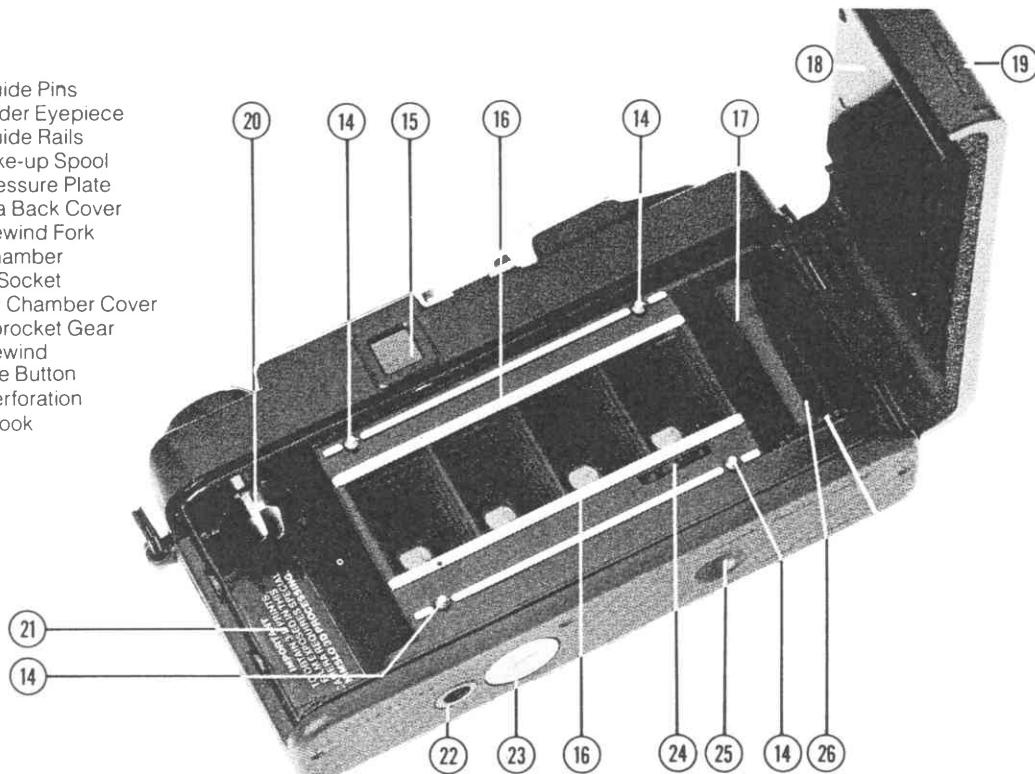
WARNING: Pressure on the shutter release button will drain your battery whether or not the film is advanced, so be sure the camera is not under pressure when stored. Current consumption is a hefty 60 millamps if film is advanced, or 10 millamps if already fired when pressure is applied to the shutter button. In short, any constant pressure on the shutter button will drain your batteries prematurely.

DESCRIPTION OF PARTS

1. Film Advance Lever
2. Shutter Release Button with Cable Release Socket
3. Dedicated Pin for Nimslo Opti-Lite Flash
4. Accessory Shoe with Automatic Flash Contact
5. Film Speed Selector
6. Exposure Meter
7. Viewfinder Window
8. Frameline Illumination Window
9. Film Rewind Crank
10. Film Rewind Knob/Back Cover Release
11. Optical Glass Lenses
12. Neck Strap Lug and Ring
13. Exposure Counter Window



14. Film Guide Pins
15. Viewfinder Eyepiece
16. Film Guide Rails
17. Film Take-up Spool
18. Film Pressure Plate
19. Camera Back Cover
20. Film Rewind Fork
21. Film Chamber
22. Tripod Socket
23. Battery Chamber Cover
24. Film Sprocket Gear
25. Film Rewind Release Button
26. Film Perforation Hole Hook



TIPS FOR MAKING BETTER NIMSLO LENTICULAR PRINTS

The original camera instruction manual gives good basic instructions (see pages 28 to 31). Because of the constraints of the Nimslo print system *the distance relationships of the subject to background have to be considered in a way that has nothing to do with the actual depth-of-field of the lenses.* Supplementary instructions provided by Nimslo are shown on pages 10 and 11.

You will note that Nimslo recommends that you never get closer than 6 feet from your subject. They say this to keep things simple, since at f/5.6 this is true, and subjects closer than 6 feet will be out of focus. However, if you are outdoors on a sunny day the aperture you are getting is generally closer to f/11. Nimslo prints may then be sharp as close as 3 to 4 feet under sunny conditions, but you must limit the background to be within a couple of feet of the subject. If you don't there will be too much parallax, and the background of the print may be too much out of register.

Note that depth-of-field (the range within which your image will be in sharp focus) and stereoscopic depth range (the total amount of parallax between the nearest and farthest objects in your picture) are not the same thing. For example, on a bright sunny day your aperture may be small enough to give you sharp focus from 4 feet to infinity. However, if a main subject at four feet is included along with prominently visible subjects at infinity, this is beyond the range of the Nimslo print system to give proper registration of both subjects. It is most likely that the print will be made with the foreground subjects in near-register, with the background subjects too far out of register for comfortable viewing.

Another thing which Nimslo does not tell you is that *the area of your negative which they actually print is about 1mm smaller on all 4 sides of the actual negative area.* That translates into total cropping of about 30% off the edges, so **keep your main subjects centered**, or you may find arms, heads or legs unexpectedly cut off!

Nimslo seems to make all of their prints a bit on the light side, so whites tend to get washed out. **Pictures with a wide range of colors throughout look the best.** Nissei seems to be better at providing good color saturation than Nimslo was.

Finally, there is only ONE lab which does the special Nimslo printing. There are no other labs offering this special service. While Nimslo used to take 6-8 weeks to process and return your prints, Nissei generally returns your order within 2 weeks.

When your prints are returned be sure not to write on the back of them with anything but a soft lead pencil. Ink and adhesives from some stickers will bleed right through, ruining your prints.

FILM SPEEDS

Standard lenticular pictures appear no grainier whether 100 or 400 speed film is used, but color saturation is better with the 100 ASA film.

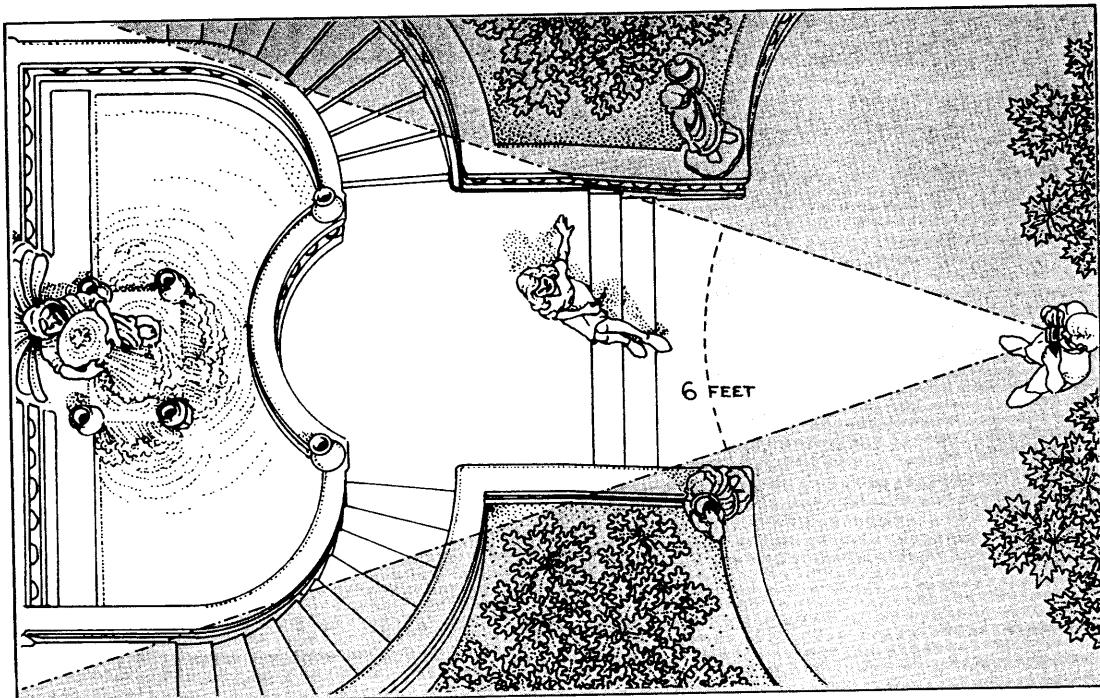
LENTICULAR 3-D CLOSE-UPS

It is possible to get closer than the distances previously indicated, if a supplementary close-up lens is used. For this method a plano-convex lens which is large enough to cover all 4 Nimslo lenses at the same time is necessary.

The flat side of the lens is placed against the lens board and the user must find a method to hold the lens in place (tape, a bracket, etc.) during exposure. It is up to the user to determine the new focus distances. The curvature of the **single** lens compensates for the closer subject distance, so that the Nimslo processing lab can print in its normal fashion. In order to avoid distracting, out of register images in the background, it will be necessary to reduce the depth of the scene by using a close or neutral background. Photographic "plus" lenses may also be used, if you can find one large enough to cover all four lenses at once. See "Nimslo 3-D Close-ups" Section.

3-DIMENSIONAL PICTURE SUGGESTIONS

- The world around you is three-dimensional and it is usually best to take pictures of subjects and objects just the way they are naturally.
- Look at the picture below. Scale and depth in the picture are provided by the relationship of each object to the others, as well as the *height*, *width* and *depth* of objects. A variety of items in the picture will enhance the 3-Dimensional effect. Bright colorful areas in pictures also add depth. You can achieve this by having your subject wear colorful clothes or by taking pictures of colorful scenes.
- Frame your picture to include subject and background objects.
- For scenic pictures, include perhaps a tree, a person, etc., so that your picture has foreground interest as well as background and scenery. REMEMBER, KEY PICTURE SUBJECTS MUST BE AT LEAST 6 FEET FROM THE CAMERA FOR BEST RESULTS.
- For best results outdoors, try to keep the sun over your shoulder while avoiding poses that have your subject facing directly into the sun.
- Posing subjects directly against a wall, will result in flat pictures lacking depth. Move the subject to a more interesting area— one with greater perspective—with more space between the subject and background.
- Pictures of scenes beyond 25 feet will not appear to have as much depth as you might anticipate. In this picture taking situation, position a subject or object at least 6 feet from your camera and use the setting beyond 25 feet as your background.



NIMSLO STEREOSCOPIC DEPTH-OF-FIELD INSTRUCTIONS

- Move around while looking through your camera's viewfinder until you see the picture you wish to photograph.
- Make sure there are NO OBJECTS IN YOUR PICTURE WHICH ARE CLOSER THAN 6 FEET TO THE CAMERA.

Dimensionality in your photograph is created by the distance between your subject and the background, below are examples to guide you.

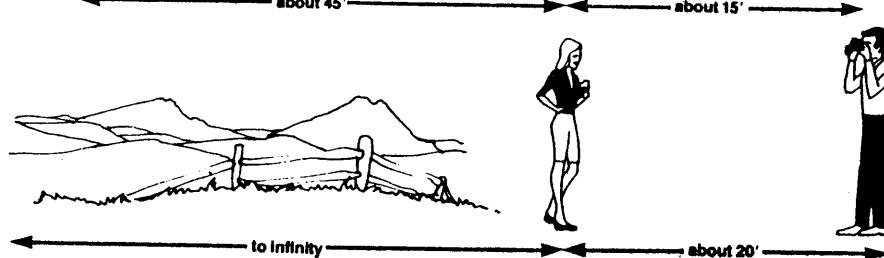
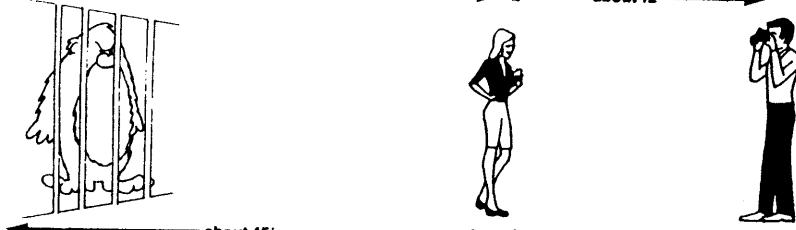
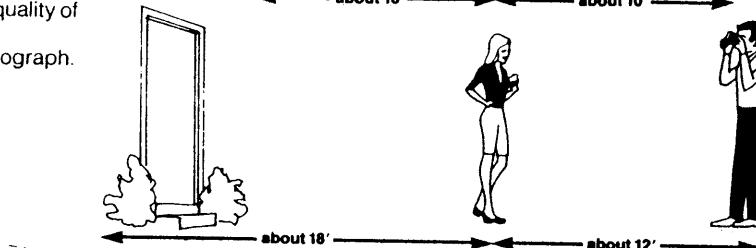
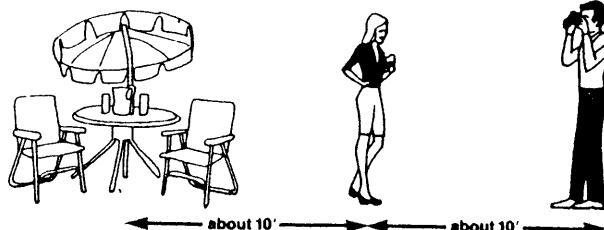
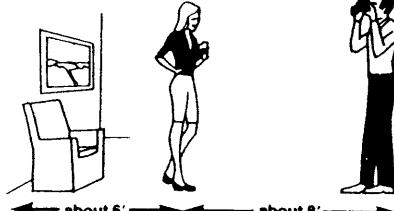
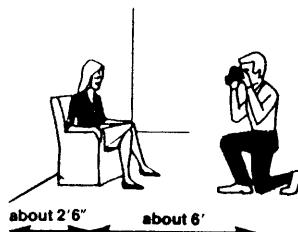
- **Judge** the distance from your subject to the background, then
- **Compare** this distance to the illustrations and take your photograph at the suggested distance from your subject for the most pleasing effect.
- **To judge distance** take a look around your home, there are many things there that will help you judge distance, for example

--Stand at the foot of your bed, the bed head will be about 7 feet from you.

--Measure the length of your car.

Keep these comparisons in your mind to judge distance.

• Everything around you is 3-Dimensional so you do not need to add any clutter between you and your subject. This will only detract from the quality of your photograph.



To enhance the dimensionality of a distant scenic photograph add a simple subject figure at about 20 feet from you. If you do not wish to have a person in your photograph, simply move around until you can see a tree or some other object in your viewfinder which is about 20 feet from you.

TRICKS & USES WHICH NIMSLO NEVER INTENDED

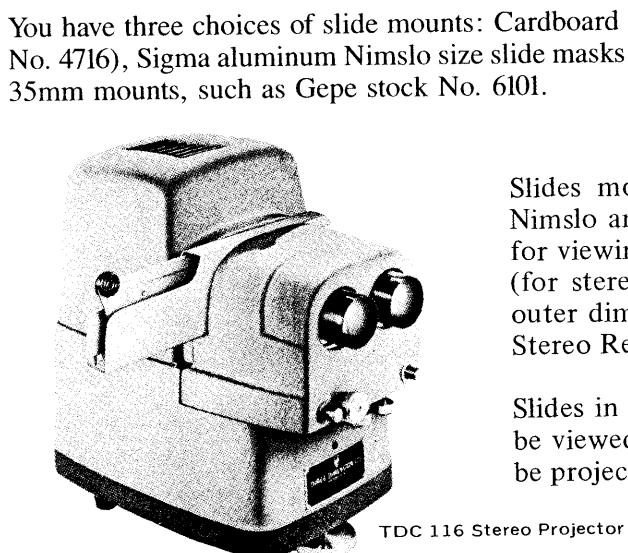
TAKING AND MOUNTING NIMSLO 3-D SLIDES

Start by loading the camera with ASA 100 or 400 **SLIDE** film of your choice (e.g. Ektachrome 100, Fujichrome 100, etc.). Be sure Film Speed Selector is set to the correct ASA. We suggest a piece of tape over the switch to keep it from accidentally being moved. When you finish the roll be sure to specify "**DO NOT MOUNT**" when you have it processed.



Sample of "DO NOT MOUNT" sticker
provided by Eastman Kodak Company

Once you have received your uncut roll of processed slide film, re-roll it for a couple of hours to get the curl out. The film should hang flat before you begin. Now you are ready to start.

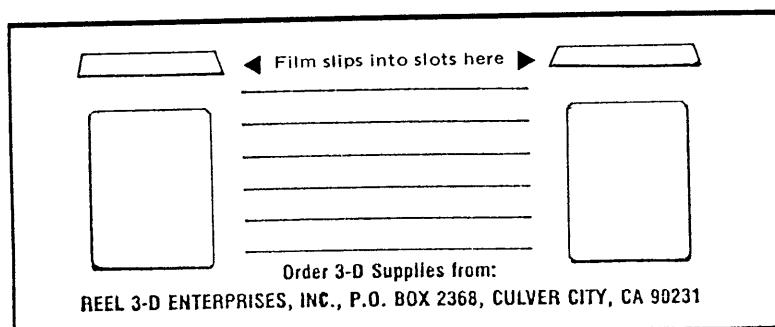


Slides mounted in the Cardboard Slip-in Mounts for Nimslo and the Sigma aluminum masks are compatible for viewing in any Stereo Realist-format stereo viewer (for stereo slides with a mount that has 1 5/8" x 4" outer dimensions), and may be projected in 3-D with a Stereo Realist-format stereo projector.

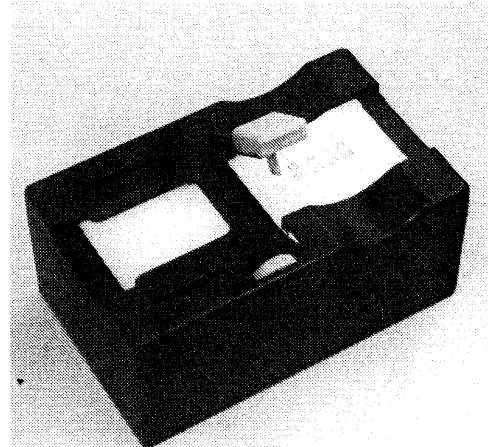
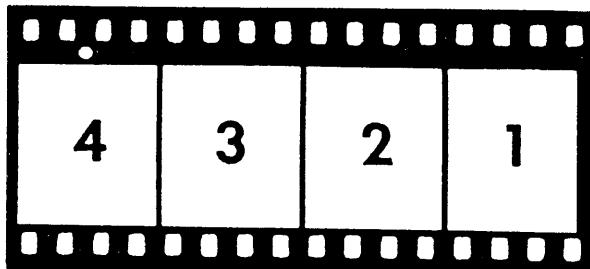
Slides in two separate 2" x 2" half-frame mounts may be viewed in special twin 2" x 2" 3-D viewers or may be projected in 3-D with twin slide projector systems.

USING REEL 3-D STOCK NO. 4716 SLIP-IN MOUNTS

Take the mount and lay it down so that the side with the film insertion slots faces up (as in the picture below). This is the side with the Reel 3-D Enterprises address on it.



Next, take your film and start cutting from the beginning of the roll. The film edge is numbered from 0 to 36 (or 24), with intermediate "A" numbers, such as 1A, 2A, 3A, etc. Start with the lowest edge number. Scissors may be used, but the job is much easier with an illuminated film cutter that lets you see exactly where you are cutting. The Nimslo slides have a small black frame line between each picture. Cut into the center of this line. This is not super critical, as the mount opening is smaller than the film image area, but the more careful you are the more room you will have to adjust the images properly.



HAMA Illuminated 35mm Film Cutter

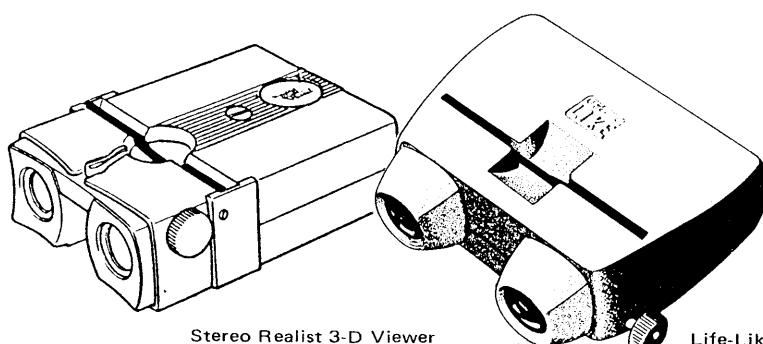
For simplicity we will number the images of each slide group 1 through 4, as shown at left. Number 4 is always the one with the red dot over it.

Now you are ready to start cutting. Cut the first film chip (#1 of the group of 4) and slip it into the slot above the left opening of the mount, with the glossy or viewing side (the side that reads correctly) facing down, and the image right side up. If the film is too wide to fit into the slot, trim the smallest amount possible from the edge which has more black showing on it. With practice you will get a better feel for where to visually cut the film.

Your first film chip should now be in place! Cut off frames 2, 3, and 4, and insert #4 (the one with the red dot on top) into the right hand film slot, just as you did for number 1. Note that when the film is inserted completely into the slot that the top edge of the film seats into the slot so that it cannot slide back out (unless it is bent upward first).

For most pictures (where the subject starts about 6 or 7 feet from the camera) this completes the mounting process, with an accuracy that should be fine for hand viewing.

Now turn the mount over (the side opposite the film slots is actually the "front"—the side to finally view from), and put it into your Stereo Realist-format stereo viewer (such as the Life Like, Stereo Realist, Kodak or Brumberger stereo viewers). You should be looking at a properly mounted Nimslo slide!



Stereo Realist 3-D Viewer

Life-Like Stereo Viewer

Now you can go to the next group of 4 and repeat the process until the roll is finished.

What about frames 2 & 3? Well, using 1 and 4 will give the strongest stereo effect. If your subjects are pretty close (about 4 to 6 feet), you may like to try mounting 1 with 3 and 2 with 4, just as previously described for 1 and 4. This will give you two pairs of stereo slides, but with a reduced 3-D effect.

The extra frames 2 & 3 could also be saved for non-stereo use, such as mounting in $2'' \times 2''$ half-frame mounts for non-stereo viewing and projection, or for putting into half-frame keychain viewers.

Once your slide is finished it is a bit smaller in image size, but with the same outside dimensions as the more common Stereo Realist-format slides. As stated before, it is compatible with all Stereo Realist-format stereo viewers or projectors.

ADVANCED MOUNTING WITH THE No. 4716 CARDBOARD SLIP-IN MOUNTS

The previous instructions describe the "basic" mounting technique. It is also possible to precision mount, or "fine tune" your slide mounting in the 4716 mount. This is usually desirable when you are taking subjects in the closer than 6 foot range, where a "flickering band" effect can result along the right and left edges of the images. For some people difficulty in fusion of the two images might also occur.

The solution involves horizontal adjustment of the two images. Hold up the mount and look at the two images. Find an easily identifiable object in the picture, which you know is *the closest object to the camera when the shot was taken* (such as a flower, a hand, etc.), *and is close to the right or left edge*. Assuming that the object is a flower near the left edge, you now want to horizontally adjust the film chips so that more of the flower, or the distance between the flower and the left edge, is visible in the right film chip, and slightly less is visible in the left film chip. Without getting technical, this is a simple way of setting the proper "stereo window". Put in a different way, the right eye sees a bit more of what is on the left edge of a window, and the left eye sees a bit more of what is on the right edge. Setting a proper window in mounting re-creates this fact of physical reality.

If there is not enough room to horizontally move the film chip, you must take it out of the mount and trim a tiny amount of film from the edge of the direction that you want to shift the film. After doing so, insert the film again and slide it right or left as desired. Once in position view the image again. Repeat this if necessary until the horizontal adjustment you desire is achieved. Be careful not to trim too much film, however, or the image will no longer fill the aperture and light will leak through. To keep the film from slipping put a piece of tape over the film slot to hold the film in place.

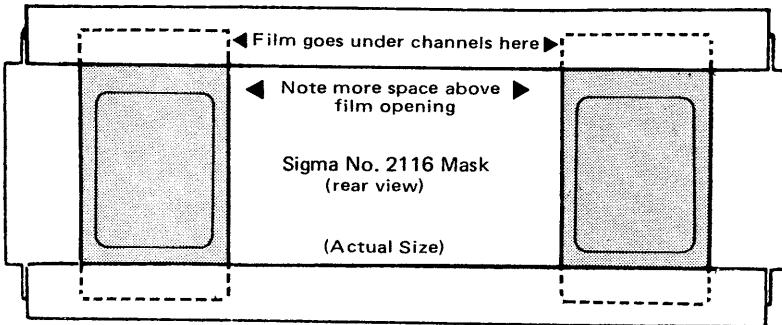
The same method will work for vertical alignment, by trimming from the top or bottom edge of the film.

If you want more detail on this subject, or some extra aid in mounting, we suggest that you get the Reel 3-D Slide Alignment Gauge Set, stock No. 8001. The gauge labeled "5 PERF REALIST FORMAT" is the one to use with this mount. The #4716 mount is designed with 62.4mm center-to-center spacing, so using this gauge will set your subject right at the plane of the stereo window. For more details read the instructions included with the gauges. Precision mounted slides are more suitable for 3-D projection.

These brief instructions are intended to help you get started, but are not a complete lesson in stereo slide mounting. For more information we highly recommend the book "***The World of 3-D***" (stock No. 1001) by J.G. Ferwerda.

USING SIGMA No. 2116 MASKS

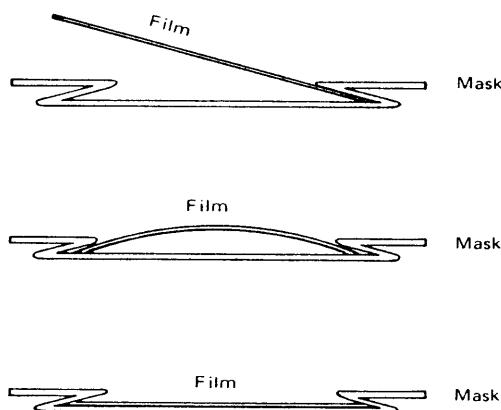
Take the Sigma aluminum mask, and lay it down so that *the side with the channels faces up*. Note that *the top of the mask has more space above the film openings than the bottom*.



Next, take your film and start cutting from the beginning of the roll. The film edge is numbered from 0 to 36 (on a 36 exposure roll), with intermediate "A" numbers, such as 1A, 2A, 3A, etc. Start with the lowest edge number. Scissors may be used, but the job is much easier with an illuminated film cutter that lets you see exactly where you are cutting. The Nimslo slides have a small black frame line between each picture. Cut into the *center* of this line. This is not critical, as *the mask opening is smaller than the film image area*, but the more careful you are the more room you will have to adjust the images properly.

For reference simplicity we will number the four images of each slide group 1 through 4, as shown on page . **Number 4 is always the one with the red dot over it.**

Now you are ready to start cutting. Cut the first film chip (#1 of the group of 4) and place it in the lower channel of the left opening of the mask, with the viewing side (the side that reads correctly) facing down, and the image right side up.



To get the film into the channel with greater ease, pick up the mask and curve it very slightly upward by squeezing from the top and bottom edges. This opens up the channel. Curve the film slightly, and do the same to get it first into the bottom and then into the top edges of the channel. Now your first film chip should be in place!

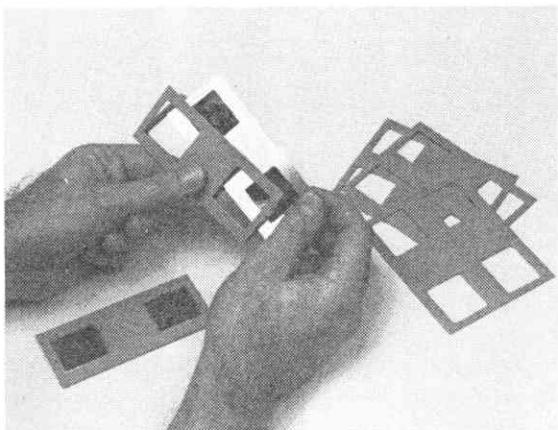
Cut off frames 2, 3, and 4, and insert 4 (the one with the red dot on top) in the right opening channels, just as you did with the first film chip.

If the red dot is *not* covered by the mask, the mask is upside down. Take the film chips out, rotate the mask 180 degrees and repeat the previous steps.

Now hold the mask up to the light and look at the images. Find an easily identifiable object in the picture, which you know is the closest subject to the camera at the time the picture was taken (such as a flower, a hand, etc.), and is close to the right or left edge. Assuming that the object is a flower near the left edge, you now want to horizontally adjust the film chips so that more of the flower, or the distance between the flower and the left edge, is visible in the right film chip, and slightly less is visible in the left film chip.

Without getting technical, this is a simple way of getting the proper "stereo window". Put in a different way, *the right eye sees more of what is on the left edge of a window, and the left eye sees a bit more of what is on the right edge*. In the mounting process this observation of physical reality is imitated.

Now turn the mask over (*the side opposite the channel openings is actually the one to finally view from*), and put it in your Realist-format stereo viewer (such as the Life-Like, Star D, Brumberger, Stereo Realist or Kodak Stereo viewers). You should now be looking at a properly mounted 3-D slide!



Putting Aluminum Mask into Cardboard Foldover

The next step is optional. Tape one edge of each film chip so that it will not move in future. If you don't use tape you can crimp the top and bottom channels of the mask to hold the film more securely.

The final step is to put the mask into a cardboard foldover (stock no.2130), an aluminum mask frame for use without glass (stock no. 2400), or to bind it in glass with an aluminum binder frame (stock no.2500 binder frames with no.2501 glass). The choice is yours.

Now you can go to the next group of 4 and repeat the process until the roll is done.

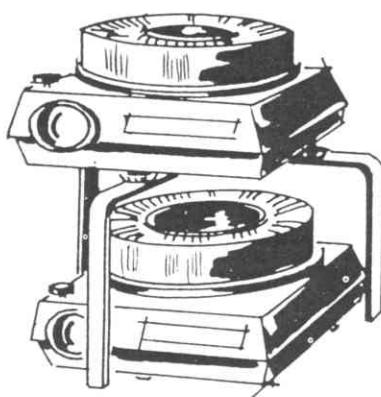
What about frames 2 & 3? Well, using 1 and 4 will give the strongest stereo effect. If your subjects are pretty close (about 5 or 6 feet), you may like to try mounting 1 with 3 and 2 with 4, just as described for 1 and 4. This will give you two pairs of stereo slides, but with a reduced 3-D effect.

Once your 3-D slide is finished it is a bit smaller in image size, but with the same outside dimensions as the more common Stereo Realist-format slides. It is compatible with **ALL** Stereo Realist-format stereo viewers or projectors.

TWIN 2"×2" NIMSLO 3-D SLIDE MOUNTING

Because of the automatic capability and ready availability of standard slide projectors for 2"×2" mounted 35mm slides (such as the Kodak Carousel), it has been increasingly popular to use this format for stereo projection with a matched pair of projectors.

The Nimslo can be used for this type of system by mounting frames 1 and 4, as described previously, into two separate 2"×2" mounts which have Nimslo size openings. The closest size available is the standard 18mm x 24mm half-frame opening (such as the GEPE no.6101), which is about 2mm taller than the Nimslo size. On frame 1 this can be ignored, letting the black film area form the top mask edge. On frame 4 the red dot shows, so this must be masked with opaque tape. Alternatively, the red LED in the camera can be covered with a dab of black paint to get rid of this problem permanently.



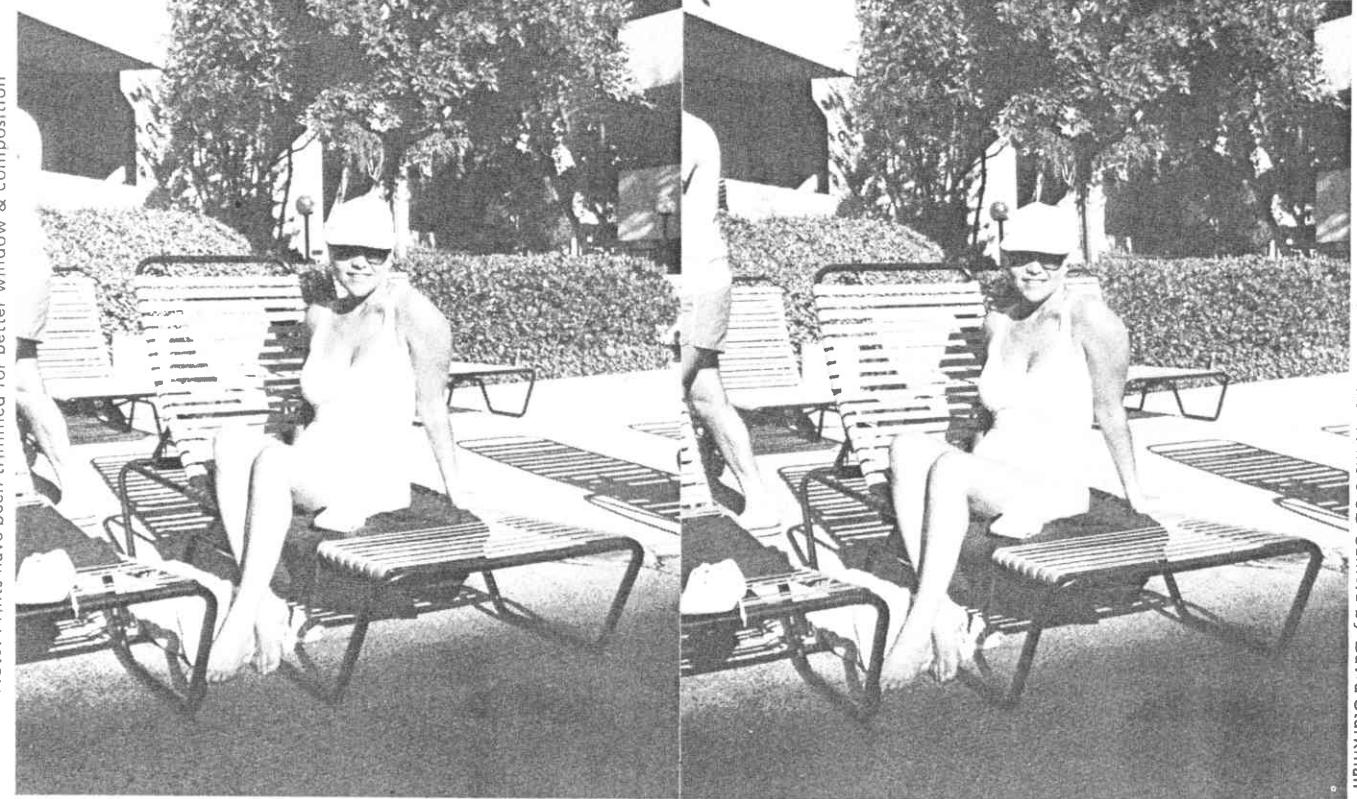
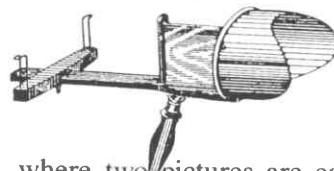
When using the separate 2"×2" mounts, follow the same basic mounting procedures as for the Sigma masks. 3-D hand viewers are also available for this format. 3-D projection with twin projectors requires polarizers in front of the lenses, a **SILVER SCREEN** and polarized 3-D glasses. See "The World of 3-D" book by Ferwerda for more details on this subject.

OTHER THINGS YOU CAN DO WITH YOUR NIMSLO CAMERA

Due to the limitations and cost of lenticular 3-D prints, many users have been discovering (or re-discovering) some of the more "old-fashioned" possible uses for the Nimslo camera (besides doorstops, bookends, shotputs and paper weights).

"STEREO VIEW CARD" PRINTS

You may be familiar with antique style stereo views, where two pictures are each printed about 3"×3", and mounted side-by-side on a 3½"×7" card. This is then viewed in an old fashioned style stereoscope.



Note: Prints have been trimmed for better window & composition

Photo: Taken with Nimslo 3D Camera by David Starkman

You can easily make stereo views like this with your Nimslo. Just put normal color print film (such as ASA 100 or 400 Kodacolor or Fujicolor) into the camera, take your roll of pictures, and then take them to almost any lab for processing and printing. **Make sure they can handle "half-frame" size negatives.** If so, you will end up with vertical 3½"×5" prints.

You only need TWO prints for this type of 3-D, and the best effect comes when the prints are from the right and left end negatives of each group of four. To avoid confusion, and so that the lab can easily print just those negatives that you want, we suggest that you cover the middle two lenses before shooting.

Since there were no lens caps made to fit the Nimslo camera, one method is to tape two small wads of black velvet over the center two lenses. Before you consider this to be a waste of money, keep in mind that the developing and printing of the negatives is fairly cheap—it's the cost-per-print that adds up. With this method you will get only the correct frames printed.

(If you can't stand the thought of wasted film, see the description of the "Teco-Nimslo" later on in this book, under the "NIMSLO MODIFICATIONS" section.)

Next, you will need to mount the two $3\frac{1}{2}$ " x 5" prints for viewing. The simplest method is to cut a piece of cardboard or mat board to 5" x 7" size, and to mount the two vertical prints side-by-side, with the right eye view on the right, and the left eye view on the left. The mounted pair can then be viewed in an old-fashioned style print stereoscope. With this method the top of the print may not be visible in the stereoscope, so you may want to trim the height closer to the more traditional $3\frac{1}{2}$ inches.

The easiest way to tell which is the left view, and which is the right view, is to rest the views on a blank card in the stereoscope and view them. If the view seems strange or inverted, transpose them and see if it looks more normal. You will automatically see the difference easily once you try this.

After that you can easily check each pair before you mount them to the card. Double stick tape, rubber cement, dry mount tissue or spray mount adhesive may be used to mount your prints.

The following are a few basic tips on mounting your prints. Since the labs have a bit of leeway on how they compose your prints, it's possible for one image to be a bit higher than the other. Look along the top or bottom edge of the print and find a series of recognizable points (a rock, a flower or some other small item) and see their relationship to the edge. ***That relationship should be the same for BOTH prints.***

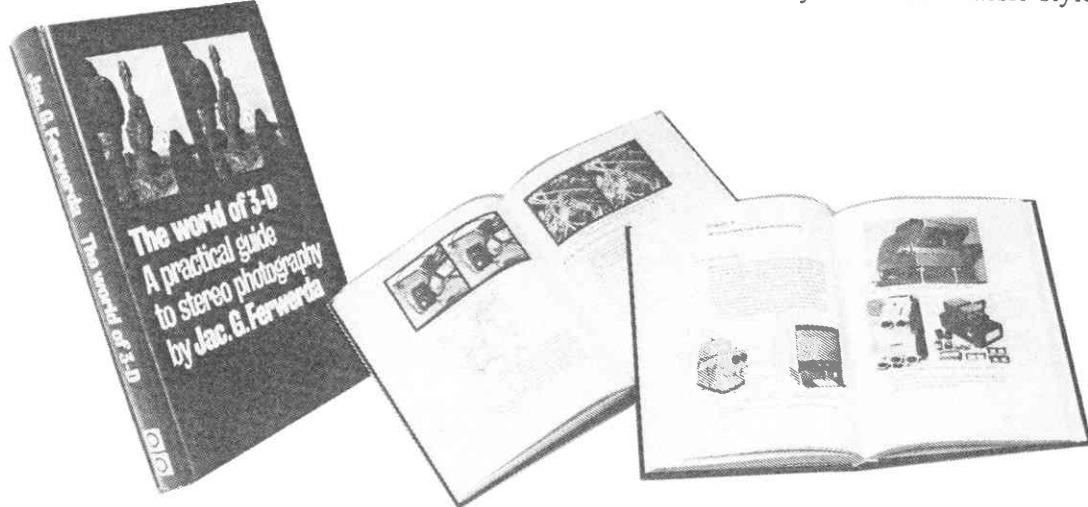
For example, say you look at the right print and see a single red flower about $1/8$ " from the bottom near the left edge of the print, and a yellow flower at the same distance near the right edge.

You should find the ***same*** relationship on the left print. If you found that on the left print there was a $1/4$ " distance between the two flowers and the bottom edge, you should then carefully trim the bottom to match the right view. Now the tops of the prints won't be the same height, so lay a straight edge across them and trim them evenly, also. Once this is done the views may then be mounted on a card, as already



A Modern Replica of an Old-Fashioned Stereoscope

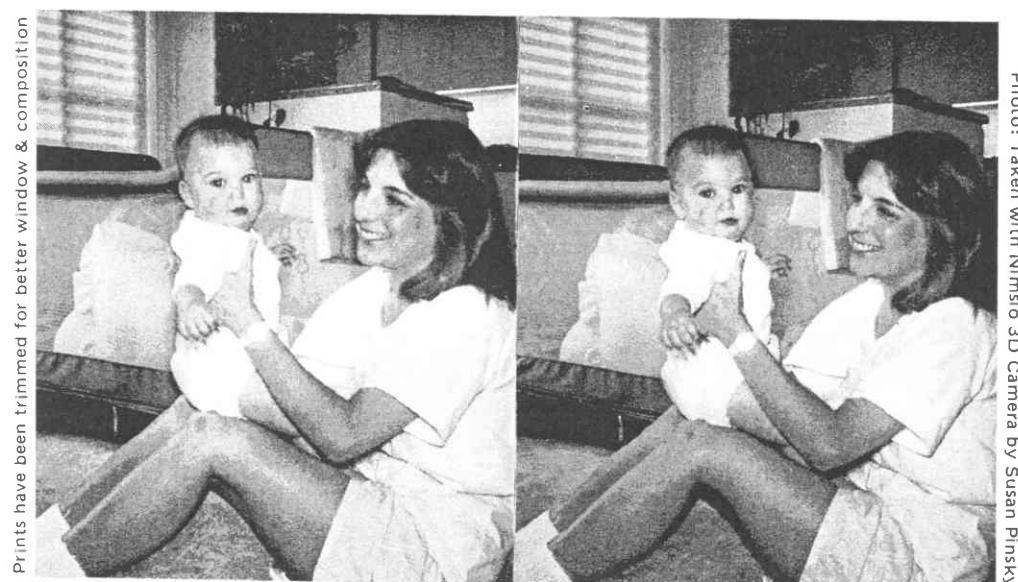
described. Right and left edges may also be trimmed in the same way, and you might want to consider cropping the height of the print from 5" to 3" to more closely match the classic style.



The finer points of mounting 3-D prints (and slides) are covered in the book "The World of 3-D: A Practical Guide to Stereo Photography", as sold by Reel 3-D Enterprises, Inc. We highly recommend this book.

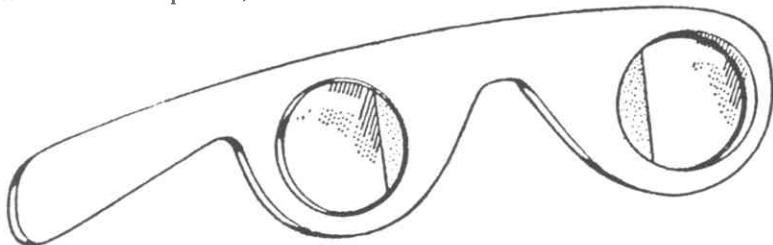
SMALLER PRINT FORMAT

Since many labs may not be equipped to enlarge the half-frame Nimslo format negative to standard $3\frac{1}{2}'' \times 5''$ prints, you may prefer to have them print on their standard setup, without further enlargement. In this case you will get a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ image area on a $3\frac{1}{2}'' \times 5''$ print.



The rest of the print area will be black (assuming you covered the center two lenses). Trim the black part away from both the left and right prints, and mount them side-by-side on a $3\frac{1}{2}'' \times 5''$ card, in the

same fashion as the previously described prints. This may then be viewed with the Folding Plastic Stereoscope, the Fold Flat Stereo Print Viewer or the Plastic Hand Held 3-D Print Viewer—all available from Reel 3-D Enterprises, Inc.



Hand-Held 3-D Print Viewer

NIMSLO 3-D CLOSE UPS

In the March/April 1985 issue of "Stereo World", the editor, John Dennis, described a simple method for taking close-ups with the Nimslo. His technique is to cover up two adjacent lenses with tape, and to put a single 1.25 diopter lens from a pair of reading glasses in front of the remaining uncovered pair of lenses.

Dennis says this will shift focus to about 2 feet—a good portrait distance. Also, the 18mm separation of adjacent lenses provides close to a 1/30 ratio of lens separation to subject distance. Under sunny light conditions the camera's automatic exposure system will choose a small lens aperture, yielding considerable depth of field, which will allow you more latitude in guessing a 2 foot distance.

He suggests that in low light, a two foot string can be tied to one of the strap holders for a quick check of the proper distance—even with hand held shots. He cautions to be careful to avoid covering the exposure sensor with any part of the glasses frame.

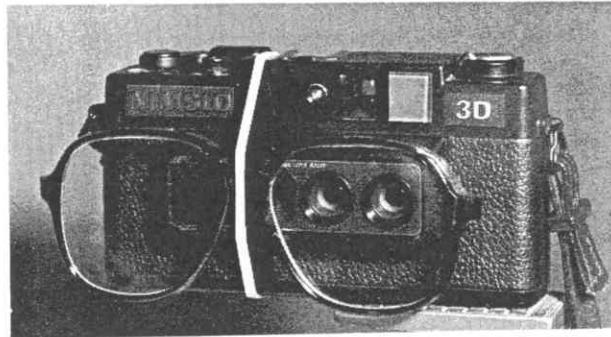


Photo: John Dennis

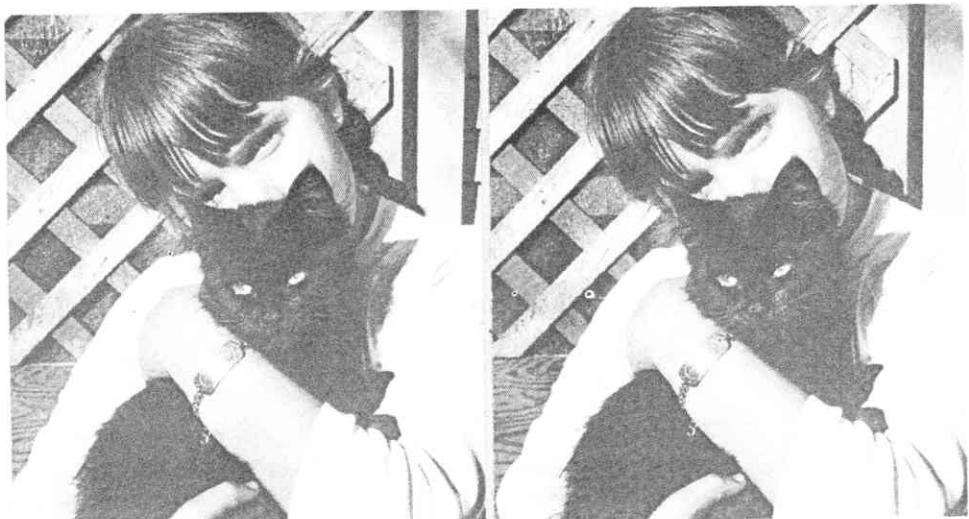


Photo: John Dennis (Nimslo with 1.25 diopter lens)

David Burder, of Great Britain, has determined that photographic "plus" lenses may also be used. They usually come in sets offering +1, +2, and +4 diopters. The approximate focus distances are +1 = 28"; +2 = 18"; and +4 = 9", all measured from the film plane.

Using the +1 close-up lens has proved very effective for head and shoulder portraits with no sign of depth distortion. A simple technique for approximately measuring 28" is to reach your arm out and touch your subject's nose with your finger while you compose through the viewfinder. This is also sure to give you a perfect smile for your portrait.

Technical Enterprises offers custom made lens sets for taking close-ups at 6", 12", or 30" for use on their specially modified version of the Nimslo camera. For more information see the "NIMSLO MODIFICATIONS" section.

When using supplementary lenses the subject should be placed as close to the background as possible, to avoid large and exaggerated parallax differences. The brighter the general lighting the smaller the automatically camera-chosen aperture will be, resulting in greater depth-of-field. Therefore, sharp results for close-ups will be much more likely in bright sunny conditions. Measuring distance to subject carefully will also help insure sharp focus.

USING OTHER ASA SPEED FILMS

Bill Duggan, of the Potomac Society of Stereo Photographers, has put Neutral Density (N.D.) filters over the exposure meter sensor of the camera to "trick" it into giving correct exposures with film speeds other than the indicated ASA 100 or 400.

It follows that to go from ASA 100 to ASA 50 or from ASA 400 to ASA 200 involves lowering the film speed by one full f-stop. This may be achieved in four ways. 1) Use a Kodak Wratten 0.3 Neutral Density filter. 2) Use a Hoya No. 2 Neutral Density filter. 3) Use Rosco No. 3402 Neutral Density filter material 4) Use one or more layers of frosty Scotch tape (sellotape, if you're British) over the sensor.

The two other speeds you would most likely want to use are ASA 64 and ASA 25 for Kodachrome. With the film speed selector switch set at 100 use Wratten No. 0.2 over the sensor when using ASA 64 film. For ASA 25 use Wratten No. 0.6 (2 stops) over the sensor. The normal polarizers made for cameras also reduce the light by about two stops, and therefore could also be used to go from ASA 100 to ASA 25. Again you may experiment with frosty tape or other filter material to obtain the speeds that you want.

Note: These suggestions are approximate, and should be tested on your particular camera to determine best results. Other film speeds are obviously obtainable, but you will have to experiment to determine the proper combinations.

MANUAL APERTURE CONTROL

We've already stated that both aperture and shutter speed settings are fully automatic on the Nimslo camera, however, some manual control of the aperture is possible. By covering the Exposure Meter Sensor with opaque tape you will automatically get the slowest shutter speed of 1/30th of a second and maximum aperture of f/5.6. This can be useful if you are matching a particular film speed or flash unit, and these settings happen to match what you want.

To obtain the fastest shutter speed of 1/500th second with the smallest aperture of f/22 Dr. Paul Milligan of New Mexico came up with a clever solution. In an article in "The Stereo Flash", newsletter of the

Chicago Stereo Camera Club, he wrote that all you need to do is to put a light right in front of the Exposure Sensor. To do this he bought a small wheat grain bulb from Radio Shack, mounted it directly in front of the sensor, and powered it by a couple of AAA batteries, with a small toggle switch thrown in. Whenever he wants a small aperture (such as for flash photography) he just turns on the switch, the light comes on, and the camera is fooled.

David Burder achieves this by an internal electrical modification via a micro switch on the body which, when pressed, stops the camera down to f/11.

Michael Starks, from San Rafael, California, accomplishes time exposures (bulb setting) by reversing the batteries in his Nimslo camera. (Reverse the direction of the batteries so that the -'s face the +' symbol direction.) He strongly suggests changing them back to their normal positions after you are through so as not to damage your camera, or deplete the battery power prematurely.

FLASH PHOTOGRAPHY WITH YOUR NIMSLO 3-D CAMERA

Like the Nimslo camera, the Nimslo Opti-Lite Flash is extremely simple to use. Whenever the light level is low enough that the red indicator is showing in the camera viewfinder, the flash should be used.

The Opti-Lite Flash is "dedicated" to the Nimslo in that when the flash is charged and ready it will indicate in the viewfinder by changing the red LED to green. The flash itself does not make any automatic adjustments to the camera, and is not dedicated in any other way (except being matched for ASA and exposure as indicated).

It should be noted that **any** flash can be used on the Nimslo, as long as the automatic or manual exposure settings of the flash are able to work for the film speed you are using with the camera aperture at f/5.6. (Whenever the red LED shows in the viewfinder the camera is at f/5.6 aperture.)

When other flashes are used the red LED will not disappear, however, this simply means the camera is at f/5.6 and pictures may still be taken if flash settings are properly made.

The Opti-Lite Flash may also be used on other cameras that have hot shoes, as long as the camera aperture is set to f/5.6. Read the scale on the flash for exposure information.

Our own experience with the Opti-Lite Flash when used for taking lenticular prints is that it seems to work best with both heads always pointed directly at the subject. Using the bounce flash feature seems to offer no advantage.

HYPERSTEREO SLIDES

Hyperstereo slides or print pairs are 3-D images taken with a wider than normal lens separation. The result has "more 3-D" than you would get with the normal lens spacing of the Nimslo camera. A wider than normal lens spacing can make it possible to see things in depth that would normally be too far

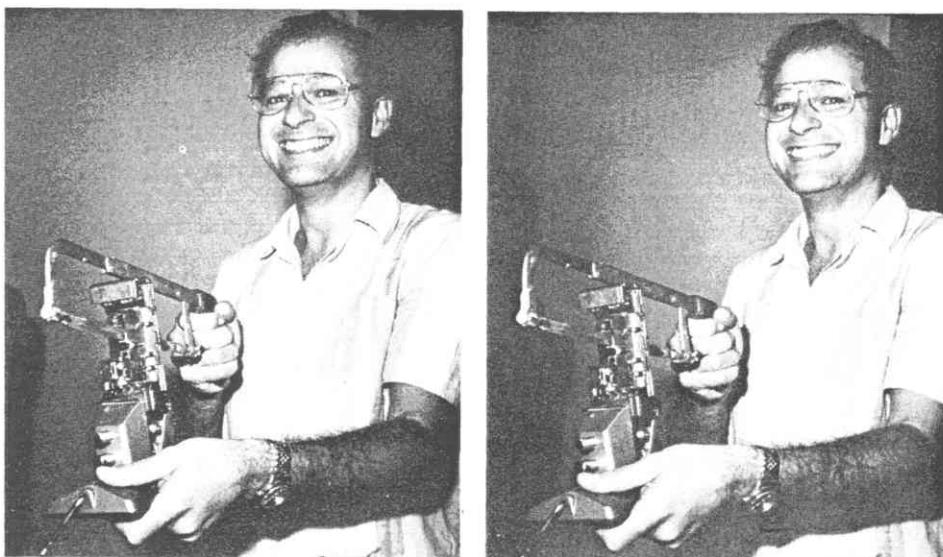


away to have any relief, such as a scenic view of far away mountains with no very close foreground subjects. The result is the photographic equivalent of what a giant might see, whose eyes are much farther apart than our own.

One way to take a Nimslo hyperstereo is to modify the camera so that it can take double exposures. See "Non 3-D Uses for the Nimslo 3-D Camera" section for how to make this modification. When you compose your scene make a mental note of how all of the subjects are framed in relation to the viewfinder edges. Take your first picture with the two left lenses covered. Move several feet to the left, uncover the two left lenses, cover the right two lenses, re-cock the shutter without advancing the film, and you're ready to take your second half of the picture. Compose the scene again exactly as you did for the first picture. Take your second shot. If you aligned everything properly you should get a hyperstereo Nimslo image.

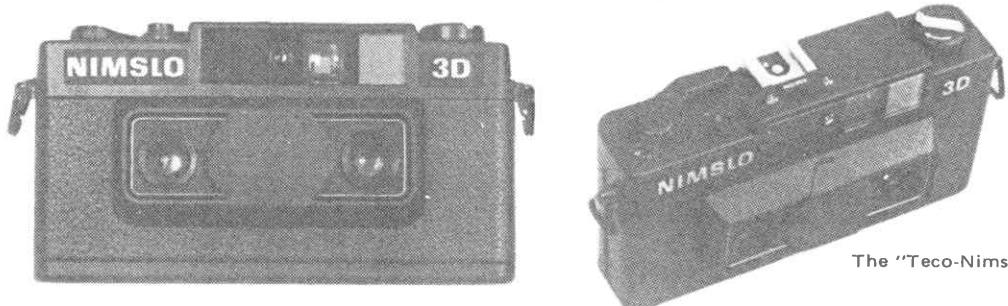
Hyperstereo slides can also be done without modifying the camera by taking a picture, quickly advancing the film to the next frame, stepping slightly to the right or left and taking a second picture, carefully keeping the same composition. This will give you four sets of hyperstereos by combining one of the frames from the first set with one of the frames from the second set (four times).

NIMSLO MODIFICATIONS (FOR NON-LENTICULAR APPLICATIONS)



David Burder demonstrates one of the more violent steps in the conversion of a Nimslo to a two lens automatic stereo snapshot camera—the "Burdlo".
Photo: David Starkman

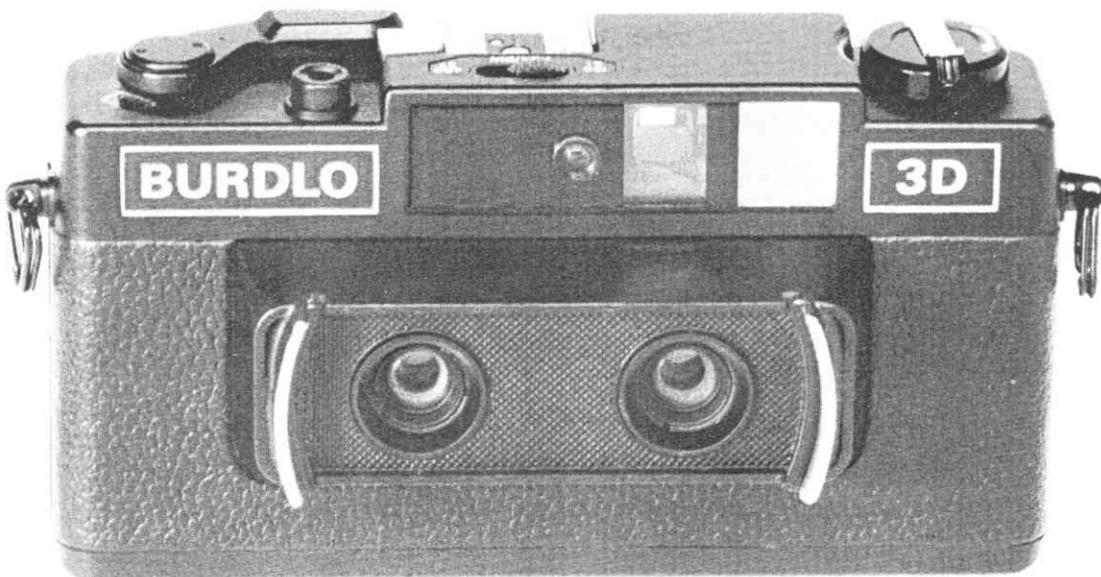
The recent close-out prices of Nimslo cameras have led many people to do a bit of experimenting and tinkering to customize the camera to other-than-intended uses. Two of the most successful modifications that we have seen are the "*Teco-Nimslo*" by Technical Enterprises, and the "*Burdlo*" by David Burder.



The "Teco-Nimslo" 3-D Camera

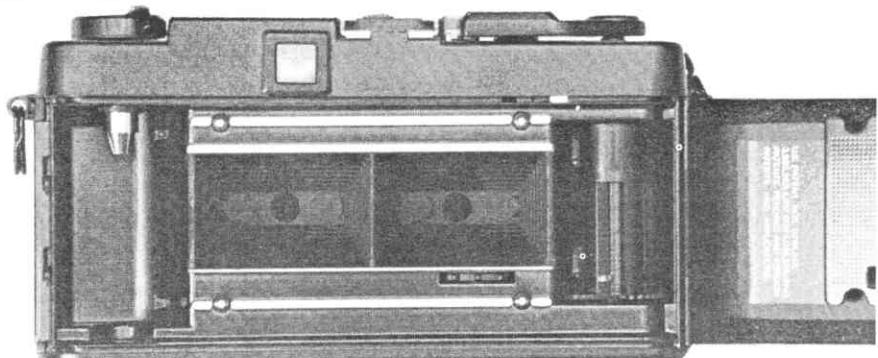
The **Teco-Nimslo** is essentially a standard Nimslo with a modified transport mechanism, and provision for a special lens cap for the center two lenses. With the lens cap in place, and the advance modified to travel half the normal Nimslo distance, slides may be taken a pair at a time (with the outer two uncovered lenses) with **no film wastage!** Like the Stereo Realist system, this leaves room for two frames (each the half of two different stereo pairs) between each stereo pair. Thus, a 36 exposure roll of film will yield 36 Nimslo size (18mm x 22mm) stereo pairs. Depending on what you normally pay for film and processing, the cost of the Teco-Nimslo camera conversion could easily be covered by the additional pictures you would get on shooting a dozen rolls of film.

Technical Enterprises also offers three different close-up lens sets for the **Teco-Nimslo** camera, each snapping on like the special lens cap. The first model is set to focus at 6", and utilizes the center two lenses, with a stereo base of $\frac{3}{4}$ inches. The second model is set to focus at 12", and uses the first and third lenses for a stereo base of $1\frac{1}{2}$ ". A parallax-compensating viewfinder device is included for these models. The third model is set to focus at 30", using a $1\frac{1}{2}$ " base. This is a perfect distance for 3-D portraits. Parallax viewfinder compensation is not needed. All three sets are designed to automatically cover the lenses not being used. For prices, more details and ordering information contact: Technical Enterprises, 1401 Bonnie Doone, Corona del Mar, CA 92625. Telephone (714) 644-9500.



The **Burdlo** is a much more radical modification of the basic Nimslo 3D camera. The camera is totally stripped to the chassis, the lens board and shutter blades are completely removed, and the first and third septums are removed from the back of the camera, leaving only one in the center. The height is milled open 2mm, back to the 35mm film standard of 24mm, with the final result being two adjacent normal film frames of 24mm x 36mm.

Rear interior view of the Burdlo conversion showing the "factory finished" quality of the side-by-side 24 x 36mm apertures. The reduced lens spacing makes it unsuitable for good scenic 3-D, but ideal for people and portraits.



To accommodate this the lens board is modified into a two lens system with new shutter blades, and a lens base of 36mm to match the centers of the new full-frame film apertures. All of this is done while retaining the full automatic exposure features of the original camera.

The new lens board also features the addition of 72mm filter rings which allow the use of 72mm "plus" lenses or filters for close-ups or special effects.

The end result is a two-lensed Nimslo, the *Burdlo*, which takes two normal full-frame 35mm 3-D pairs at a time, yielding 18 pairs on a 36 exposure roll. On the negative side it should be noted that for technical reasons the camera vignettes increasingly at smaller apertures. At worst they still mount well into the 24mm x 28mm "European format" stereo mounts. Also, the 36mm base of the two lenses gives a reduced stereo effect for the typical scenic type of shot. It lends itself to work where the bulk of subject material is within 6 to 25 feet. With a +1 lens and the subject at 28" it is an excellent camera for portraits. For more information contact: David Burder, 3-D Images, Ltd., 31 The Chine, London N21 2EA, ENGLAND. Telephone: 01-364-0022. FAX number: 01-364-1828.



A cropped Burdlo "snapshot" of author Susan Pinsky with a friendly Swiss cow, photographed in 3-D by David Burder.

In a 1984 issue of "Stereoscopy", Journal of the International Stereoscopic Union, Burder covered some possibilities in his article "101 Uses for a Dead Nimslo". Burder has experimented with modifications using the widest and smallest possible lens bases on his two-lensed Nimslo, for normal and macro stereo effects. He also has created a conversion to an underwater stereo camera (the Sharklo? Jawslo?), and even a 24 lens version for lenticular prints (but not from Nissei).

We hope that the information in this section may inspire some successful adaptations by others. It has not been possible to supply a detailed "how-to" on making modifications, however, we refer you to the Nimslo Service Dept. Technical Information in the back of this book for details on the internal structure of the camera.

One final modification of the camera which can be quite useful is the addition of a shutter cocking lever which allows the possibility of double or multiple exposures. See next section for more on this subject.

NON 3-D USES FOR THE NIMSLO

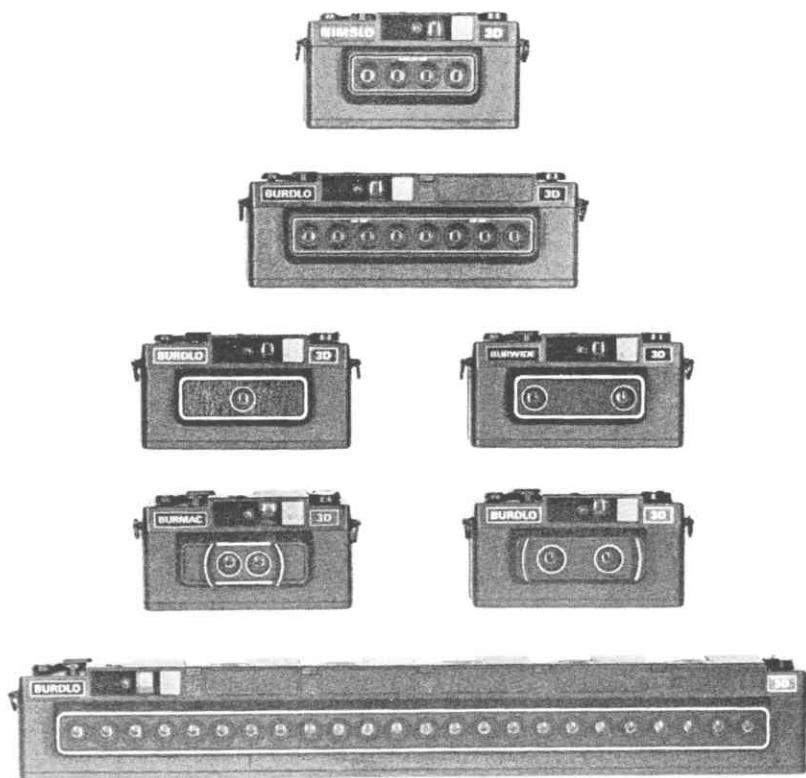
The unique format of the Nimslo 3D Camera may also be useful in many non 3-D applications. In the October 1987 issue of "Modern Photography" Mason Resnick suggested several clever possibilities in an article entitled "What to Do with a Dead Nimslo".

He wrote that even if you are not interested in 3-D, why not use the unmodified Nimslo camera as a four lensed regular (flat) camera? Since prints are often less expensive at the time of original processing than when reprints are made, this would provide an easy way to get four half price copies of each image by having the whole roll printed the first time. Could be a great way to keep relatives happy!

Resnick suggests making four flip-up lens covers, so that one picture can be taken at a time. This also requires the ability to make double exposures. He indicates that this is possible by cutting "a small notch about $\frac{1}{4}$ " by $\frac{3}{4}$ " at the lower right-hand corner of the plastic lens surround" (lower left as the front of the camera faces you). "The shutter cocking lever should be easily visible extending down from the top. Using a bent paperclip, push this lever to the right. This will re-cock the shutter."

For multiple single shots one alternately uncovers each of the four lenses recocking the shutter for four successive shots before advancing. The end result is that you've turned your Nimslo into a mono half-frame camera, getting, for example, 72 pictures on a 36 shot roll.

Resnick also suggests other possibilities including in-camera collages and creating a 21mm x 74mm panoramic image. Refer to his article for more details. We're sure you can come up with some additional uses of your own.



A "Family Tree" of some of the possible modifications of the basic 4 lensed Nimslo 3D Camera at the top. These are all functional (the one lensed model is a joke) and serve different purposes for their creator, David Burder. Photo: David Burder

CONCLUSIONS

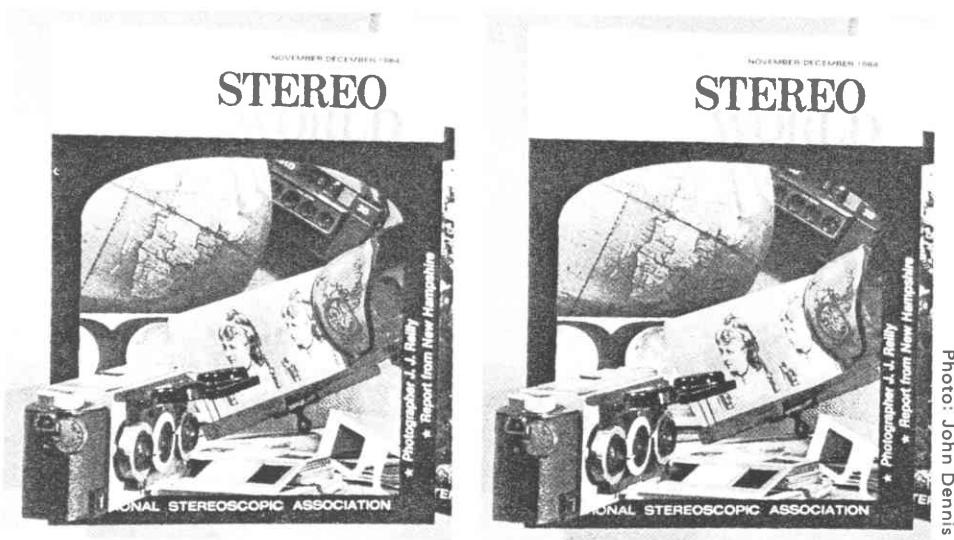
The Nimslo 3D Camera is simple, but is not a mere toy. With relatively low cost and current availability, it provides an easy, focus-free, auto exposure means for taking lenticular 3-D prints, classic side-by-side stereo prints, and 3-D slides. It is a good camera for the novice to enter the world of stereo photography, and may provide some extra portability and simplicity that could be attractive to the advanced stereo photographer as a second, third, or back-up stereo camera.

FOR MORE INFORMATION

The best all-around book on 3-D photography currently available is "*The World of 3-D: A Practical Guide to Stereo Photography*" by J.G. Ferwerda.

Other good sources are stereo clubs and organizations. Three of the largest are:

The National Stereoscopic Association (NSA), P.O. Box 14801, Columbus, OH 43214. This organization produces an extremely fine bi-monthly publication called "*Stereo World*" which contains articles of interest to both collectors of vintage stereo views and to modern 3-D photographers. Side-by-side stereo views are reproduced in every issue. A sample copy is available for \$4.00, including postage.

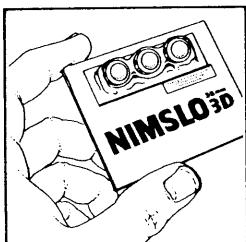


International Stereoscopic Union (ISU). Devoted completely to the worldwide sharing of information on modern 3-D photography. For more information write to: ISU, P.O. Box 2319, Bern, SWITZERLAND.

The Photographic Society of America (PSA) is the largest amateur photographer's organization in the U.S.A. It publishes the monthly "*PSA Journal*" and has a Stereo Division devoted to 3-D photographers. Through the Stereo Division it provides interesting and educational mini 3-D slide sets and complete 3-D programs available for loan to members and members clubs, individual 3-D slide critiqueing, and sponsors numerous 3-D slide competitions every year. For more information write to the Stereo Division Membership Director, Greg Taylor, 1005 Barkwood Court, Safety Harbor, FL 34695. Telephone (813) 826-3356. National Headquarters address: PSA, 3000 United Founders Blvd., Suite 103, Oklahoma City, OK 73112. Telephone (405) 843-1437.

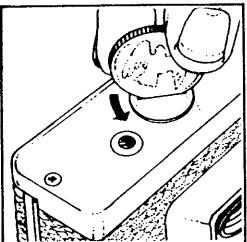
NIMSLO 3D CAMERA OPERATING INSTRUCTIONS

INSTALLING THE BATTERIES



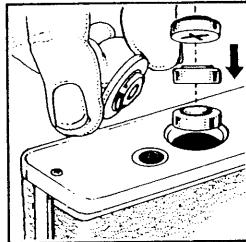
1. The batteries

Three Eveready 386 silver oxide batteries have been packed separately in your camera package.



2. Opening the Battery Chamber

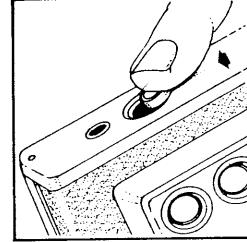
Insert a coin, or similar object, into the groove in the Battery Chamber Cover (23). Make a 1/3 turn, counter clockwise, and remove.



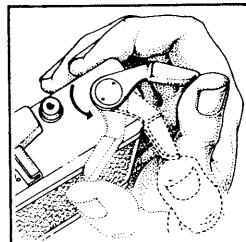
3. Battery Insertion Procedure

Insert the batteries one on top of the other into the Battery Chamber with the plus mark (+) facing into the camera.

You may find it more convenient to load the batteries by placing the flat plus (+) side of the battery against the bottom of the camera and slide it toward the opening of the Battery Chamber, as illustrated. Let each battery drop into the Battery Chamber until all three have been loaded. Return the Battery Chamber Cover and tighten.

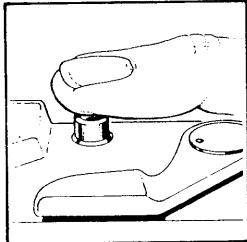


CHECKING THE BATTERIES



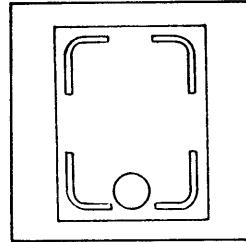
1. Advance the Film Advance Lever

Check the batteries each time before using the camera. Advance the Film Advance Lever (1) to cock the shutter.



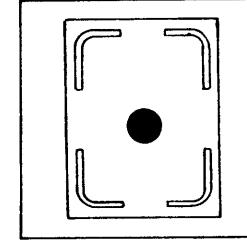
2. Depress the Shutter Release Button

Then press the Shutter Release Button (2) lightly while looking into the Viewfinder Eyepiece (15).



3. Green dot location in Viewfinder

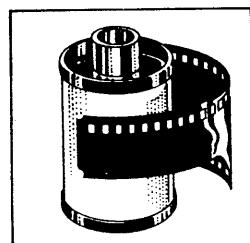
If a green dot appears at the bottom or a red dot in the center of the viewfinder, the batteries have enough power to operate your camera.



4. Red dot location in Viewfinder

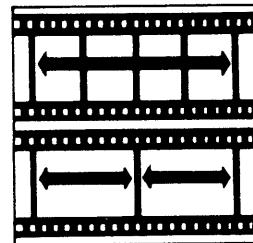
If neither signal appears, the batteries are either positioned incorrectly or have insufficient power and must be replaced.

LOADING & ADVANCING THE FILM



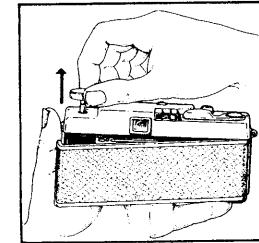
1. Uses 35mm color print film

Your Nimslo Camera uses all popular brands of 35mm color print film with a rating of either ASA 100 or 400. You may use any brand in 36, 24, 20 or 12-exposure rolls. However, AGFA film is sold with pre-paid processing mailers which cannot be redeemed by Nimslo.



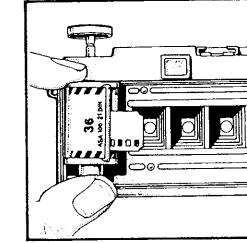
2. Two 35mm frames produce one 3-Dimensional photograph

The Nimslo 3-Dimensional process requires a group of four half-frame 35mm negative images to produce a 3-Dimensional photograph. Therefore, HALF THE NUMBER OF PICTURES STATED ON THE FILM CASSETTE WILL BE PRODUCED ON ANY ROLL OF FILM USED IN YOUR NIMSLO CAMERA.



3. Opening the camera

Open the Camera Back Cover (19) by pulling up firmly on the Film Rewind Knob (10) as far as it will go until the back springs open.

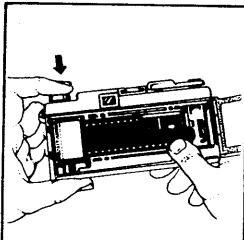


4. Place the film into the Film Chamber

Leave the Film Rewind Knob (10) in the up position and insert the film cassette with its lip pointed to the right and the protruding end down, into the Film Chamber (21).

Avoid direct sunlight when you load or unload the camera.

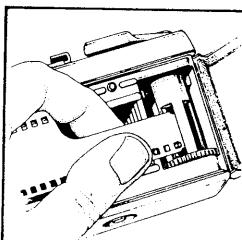
LOADING & ADVANCING THE FILM (CONT.)



5. Secure the film cassette and bring film to the Take-Up Spool

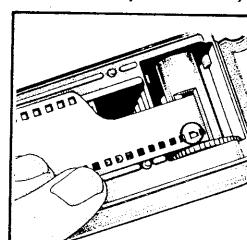
Press the Film Rewind Knob (10) down as illustrated. You may have to rotate the Film Rewind Knob slightly for it to return to the down position.

Pull out just enough film to reach the Take-Up Spool (17).



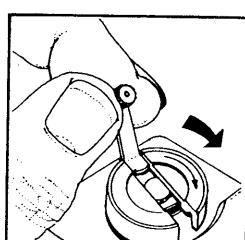
6. Film can be inserted into any slot of the Take-Up Spool

Insert the end of the film leader into a slot of the Take-Up Spool.



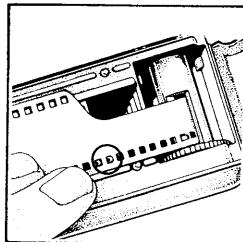
7. Attach your film to the Take-Up Spool

Latch one of the film perforation holes on the bottom edge of the film onto the small Film Perforation Hole Hook (26) at the base of the Take-Up Spool.



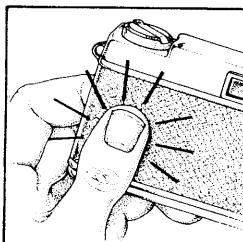
8. Tighten the film

Fold out the Film Rewind Crank (9) and gently turn it in the direction of the arrow to take up any slack in the film. (Be careful not to "over" rewind the film back into the cassette!) Fold back the Film Rewind Crank to its original position.



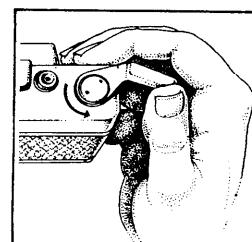
9. Engage the film on the Film Sprocket Gear

Make sure the film perforation holes on the lower edge of the film, latch (or "hook") onto, the Film Sprocket Gear (24)—located at the lower edge of the film leader to the left of the Take-Up Spool. (The film should not obscure your view of the sprocket gear teeth.)



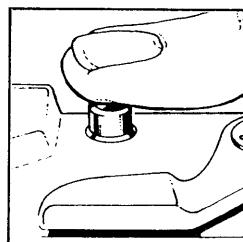
10. Close the Camera Back

Close the Camera Back Cover (19) by firmly pressing it into the locking position.



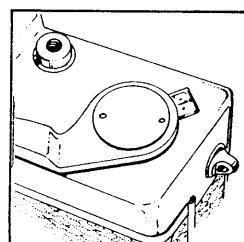
11. Advancing the film

Cock the Film Advance Lever (1) all the way...and release...allowing it to return to its normal position.



12. Releasing the Shutter

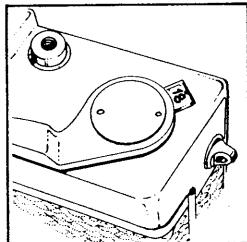
Press the Shutter Release Button (2).



13. Advance to number 1 for your first picture

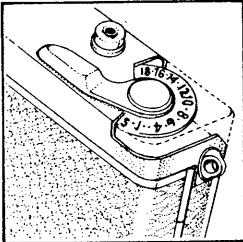
Repeat both steps until the number "1" appears in the center of the Exposure Counter Window (13). (You may have to repeat the sequence 1 or 2 times.)

EXPOSURE COUNTER & SETTING THE FILM SPEED



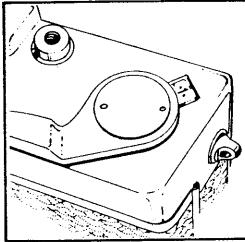
1. Exposure Counter Window

The Exposure Counter Window (13) tells you how many pictures you have taken. Since your camera uses two "standard" exposures for every one 3-Dimensional picture, the counter will indicate a maximum of 18 pictures (for a roll of 36 exposures.) Always keep in mind that the number of 3-Dimensional exposures available equals $\frac{1}{2}$ of the exposures stated on the film box — with the Exposure Counter automatically keeping track. To further remind you, the numbers 6, 12, and 18 are highlighted in red to indicate the end of the roll (for 12, 24, and 36 exposure rolls, respectively).



2. Numerical frame indication

Dots as well as numbers indicate the exposure count. You won't see consecutive numbers: 1 2 3 4 5 6 7 8. You will see: 1 · 4 · 6 · 8 and so on.)

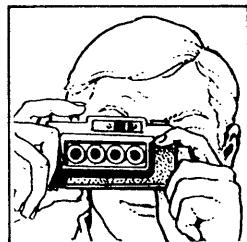


3. Setting film speed

Move the Film Speed Selector (5) on top of the camera toward ASA 100 or 400 to match the film you have loaded into your camera.

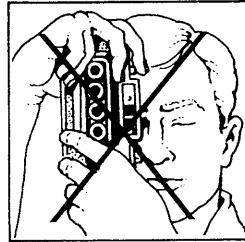
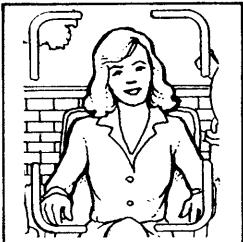
As a reminder, keep the end flap of your film box and place it in the sticker holder on your neck strap for quick reference of both your film speed and number of exposures.

HOLDING THE CAMERA



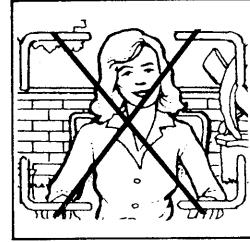
1. CORRECT camera position

Hold the camera firmly at the sides with both hands and bring it to your eye in a level position as shown above. KEEP YOUR FINGERS, AND ALL OTHER OBJECTS, AWAY FROM THE FRONT OF THE LENSES.

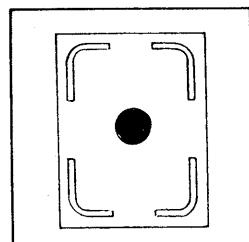


2. INCORRECT camera position

Pictures taken while holding camera in the position shown in illustration 2 (above) WILL PRODUCE NEGATIVES WHICH CANNOT BE PRINTED INTO 3-DIMENSIONAL PRINTS.



CHECKING LIGHT & AUTOMATIC FLASH PHOTOGRAPHY

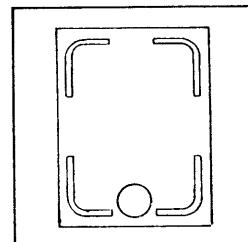


1. Red Signal

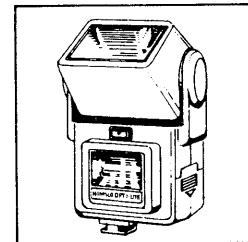
Look into the Viewfinder Eyepiece (15), and push down lightly on the Shutter Release Button (2), being careful not to depress the button all the way down for an exposure. When the button is partially depressed, you see either a red or green dot. The Film Advance Lever (1) must be cocked.

A red dot indicates there is not enough light available for a correctly exposed negative and that an Opti-Lite Flash should be used for additional lighting. Once the flash is attached—and turned on—a green dot will soon appear in the viewfinder indicating the flash is ready.

A green dot indicates there is sufficient light available for a correctly exposed picture. When using your Nimslo Opti-Lite Electronic Flash, the green dot also serves as a "flash ready" signal.

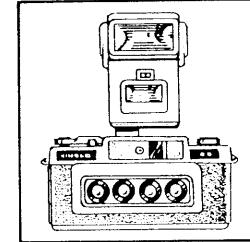


2. Green signal



3. Nimslo Opti-Lite Electronic Flash

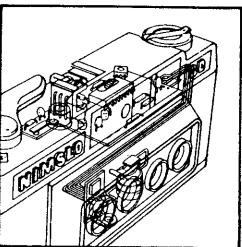
For most indoor and evening photos, it is advisable to use the Nimslo Opti-Lite Electronic Flash to provide the proper illumination or eliminate unwanted shadows.



4. The Nimslo 35mm 3-Dimensional Camera and Opti-Lite Electronic Flash

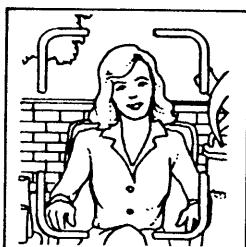
The Nimslo Opti-Lite Electronic Flash has been exclusively designed for the Nimslo 35mm 3-Dimensional Camera. It possesses a unique twin flash for both direct and "bounce" lighting to enhance all objects that add to the depth of the picture.

TAKING PICTURES AUTOMATICALLY



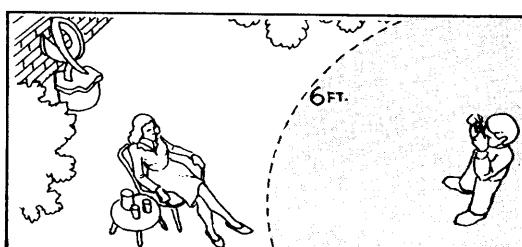
1. Taking pictures automatically

Sophisticated electronic circuitry built into the camera automatically controls the exposure allowing you to concentrate only on framing and composition. Your camera will automatically select the best combination of aperture and shutter speed to achieve a correctly exposed negative.



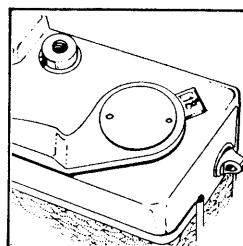
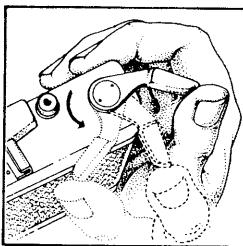
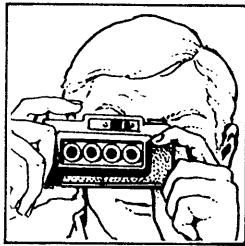
2. Framing the picture

Looking into the Viewfinder Eyepiece (15) you'll see a bright line frame – an outline of the image area in which you can compose your photograph quickly and accurately. It is a guide to show you which objects in the scene will actually be in your 3-Dimensional photograph.



3. Viewing a typical 3-Dimensional scene

When composing your pictures move around while you are looking through the camera's Viewfinder. Take the photograph when you see the most pleasing arrangement, making sure all your picture is inside the Bright Line Frame. WHEN COMPOSING YOUR PICTURES YOU SHOULD AVOID SUBJECTS OR OBJECTS IN THE SCENE CLOSER TO YOU THAN 6 FEET. This will allow you to compose beautiful 3-Dimensional photographs which are in sharp, crisp focus.



4. Now you and the camera are ready to take pictures

Because the lenses are prefocused, no manual adjustments are required. Simply hold the camera steady and press gently down on the Shutter Release Button (2) until you hear a click.

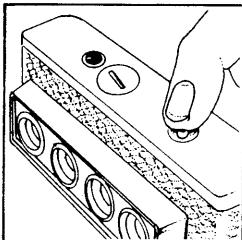
5. Advance the Film

Before you take the next picture, advance by moving the Film Advance Lever (1) one full stroke (and letting it return to its original position.) Now you are ready to shoot again.

6. End of Roll

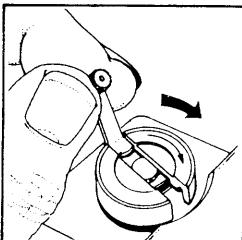
When all the exposures are used, you will see a red number in the Exposure Counter Window (13) and *feel a resistance* indicating the end of the roll. DO NOT FORCE THE FILM ADVANCE LEVER at this point. It's time to rewind and unload the film.

REWINDING AND UNLOADING FILM



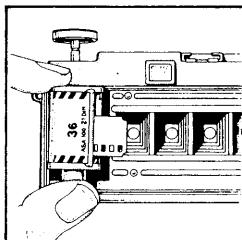
1. Film Rewind Release Button

To disengage your film when it is complete, depress the Film Rewind Release Button (25) on the bottom of the camera.



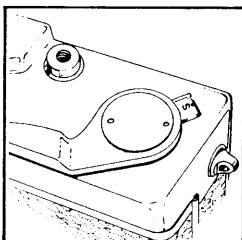
2. Film Rewind Crank

Fold out the Film Rewind Crank (9) on top of the camera. Turn the crank in the direction of the arrow (clockwise) to rewind the film back into the cassette. You will feel tension while rewinding. Continue to turn the Film Rewind Crank until you feel no tension indicating that the film has been fully rewound.



3. Unloading the Film

Pull up the Film Rewind Knob (10) to open the back of the camera and remove the film cassette.



4. Exposure Counter

The Exposure Counter (13) automatically will return to "S" when the Camera Back Cover is opened.

N I M S L O
Service Department
Technical Information

Type: G-1B Camera

Sheet No. 1

Year of Manufacture: From: December 1982
Serial Number : From: 25000051
Edition: July, 1983.

Contents:

- 1) Specifications.....Sheet No. 1
- 2) Disassembly for Inspection and Repair.....Sheet No. 4
- 3) Inspection and Adjustment.....Sheet No. 8
- 4) Trouble Shooting.....Sheet No. 13
- 5) Layout of Components.....Sheet No. 15
- 6) Component Designation.....Sheet No. 21
- 7) Circuit Diagrams.....Sheet No. 22
- 8) Wiring Diagrams.....Sheet No. 24
- 9) P.C.B. 606 Ass'y.....Sheet No. 26
- 10) " 616 Ass'y.....Sheet No. 27
- 11) Parts List.....Sheet No. 28



1) SPECIFICATIONS

1. Objective Lenses.

Number: Four (4)
Focal Length: 30mm
Maximum Aperture: f/5.6
Type: Triplet (3 Elements in 3 Groups)
Construction: Coated, High-Index Glass Elements
Focus Control: Fixed Focus, 3.0m nominal
Depth of field: 2.0m to infinity at f/5.6 (with 0.05mm circle of confusion)

2. View Finder.

Type: Reverse Galilean
Magnification: 0.61
Construction: Plastic Lens Elements (3), Glass Mirrors (2), Plastic Front Window
Parallax Correction: None
Features: Low-Light Warning, Flash Ready, Low Battery L.E.D.'s visible in View Finder.

3. Exposure Control.

Type: Programmed, via continuously - variable combined Shutter - Iris blades.
Film Speed: ISO 100/21° and ISO 400/27° via film speed selector
Range: At ISO 400/27°, from EV9 to EV16
Photo Detector: Circular, 24° semi-angle, displaced 5° below horizontal for bottom-weighting.
Field of View:

4. Film Advance.

Type: Manual single-stroke with double-exposure and missed-exposure prevention features.
Counter: Automatic resetting, upwards counting, with end-of-roll exposures (6,12,18) in contrasting color.

5. Film Rewind.

Type: Manual via pull-up rewind crank with locking rewind release button.

N I M S L O
Service Department
Technical Information

Type: G-1B Camera

Sheet No. 3

6. Miscellaneous.

Accessory Shoe:

Designed for dedicated electronic computer flash utilizing green L.E.D. in View Finder as flash-ready light; will also accommodate any conventional non-dedicated, "hot shoe" electronic flash.

Battery Compartment:

3 Eveready 386 silver oxide batteries or functional equivalent via Battery Compartment in Camera Base plate; battery test feature utilizing L.E.D.'s in View Finder Housing, operated by partial actuation of shutter release button.

Tripod Socket:

ISO 1222 ($\frac{1}{4}$ -20UNC-1B) Tripod Socket located in Camera Baseplate.

Cable Release Socket:

ISO 6053 tapered Cable Release Socket located in Shutter Release Button.

Construction:

Aluminum die-cast body, with injection-molded plastic top, bottom and front covers.

Nimlso Printer Interface:

Via "Marking L.E.D." located in proximity of film advance area.

Dimensions:

148mm long X 77mm high X 44mm wide

Weight

350g

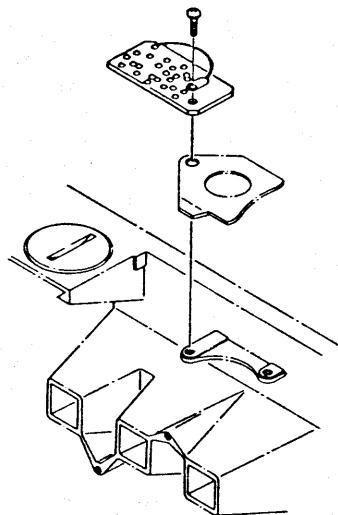
2) Disassembly for Inspection and Repair.

**** IMPORTANT FOR DISASSEMBLY ****

Before starting the repair of G-1B Cameras, please peruse the following descriptions.

1. P.C.B. 616.

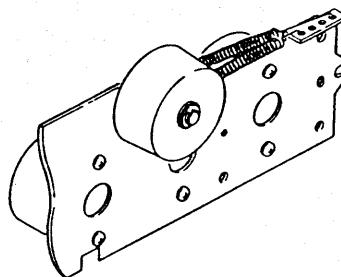
This P.C. Board 616 was designed as an operation-supporting circuit for IC CS3016 version "A". But we supply only IC CS3016 Version "C" for spare parts, and version "C" IC does not require the operation-supporting circuitry of P.C.B. 616. Therefore in case IC 1 is changed to new IC, please take off P.C.B. 616 and connect the wires as per the wiring diagram on sheet, No.24 and 25 of this manual.



2. Fly Wheel Spring.

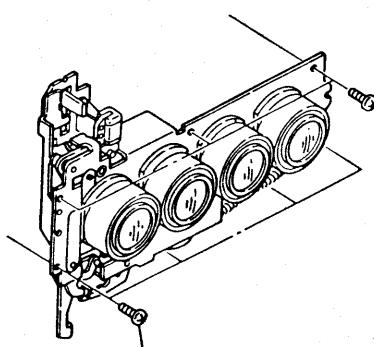
Two coil springs are hooked to holes in the Shutter Base Plate. The setting positions of these springs have been already adjusted at the factory, since adjustment of these springs requires proper test equipment. Therefore, please pay attention not to unhook the Fly Wheel spring during repairs.

Since Shutter Base Plates supplied as spare parts have also been adjusted at the factory, please keep those springs hooked at the setting positions.



3. Lens Assemblies

The 4 lens assemblies on the Shutter Base Plate have been pre-matched and aligned to close the tolerances at the factory. Under no circumstances should the lenses be changed or the mounting flanges loosened. Repair to the defective lens and/or Shutter Parts requiring the loosening or removing of lenses should be done by replacing the entire Shutter Base Plate Assembly.



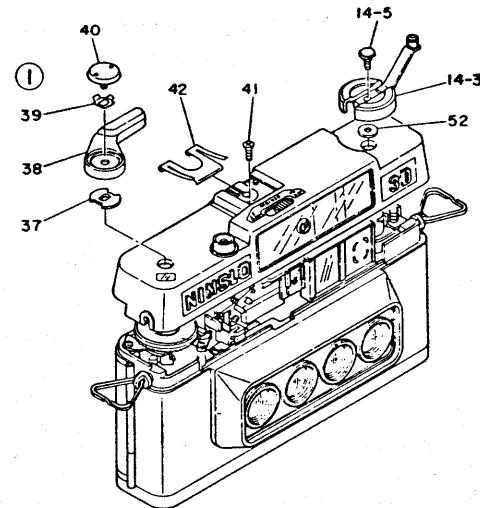
1. Top Cover.

1-1 Remove screw (40) and take off Clutch Stand Off (39), Advance Lever (38) and Key (37) from Film Advance Ratchet.

1-2 Fix the Spindle (1-7) not to run idle, turn the Rewind Crank (14-2) counterclockwise, and remove screw (14-5). Pull out Leaf Spring (14-4), Knob (14-3) and Rewind Collar (52) from Spindle (1-7).

1-3 Remove the Leaf Spring (42) from Accessory Shoe (13-4) and remove the screw (41) underneath the Leaf Spring (42).

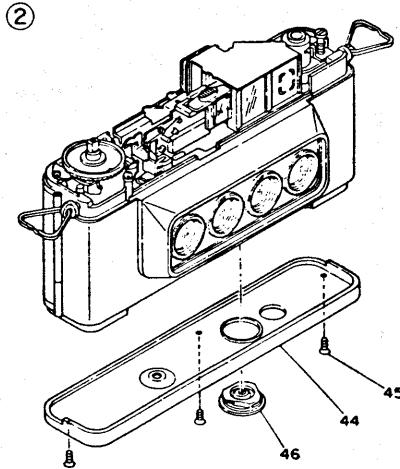
1-4 Lift Top Cover carefully so as not to damage the wires from Pin Contacts #1 and #2 which are connected on the reverse side of the Top Cover.



2. Bottom Cover.

2-1 Unscrew the 3 screws (45) and remove the Battery Cover (46).

2-2 Take off Bottom Cover (44).

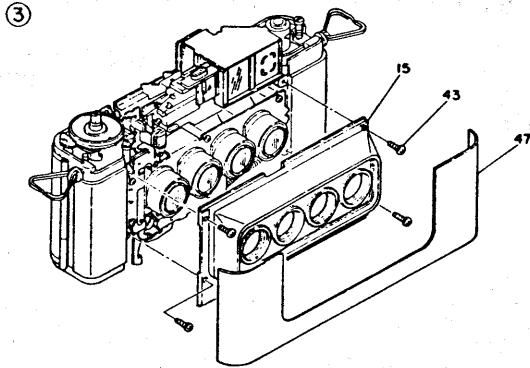


3. Front cover.

3-1 Peel off the Trim (47) from body.

3-2 Remove the 4 screws (43) at the corners of the Front Cover.

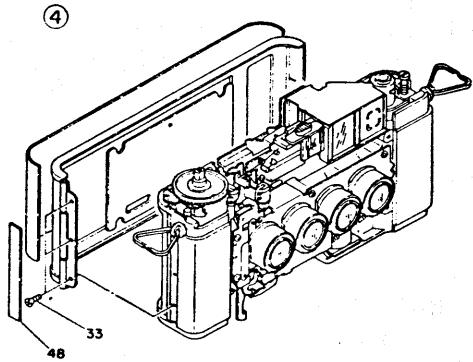
3-3 Remove the Front Cover.



4. Rear door.

4-1 Peel off Shim B (48) and remove 3 screws (33) underneath Shim B.

4-2 Remove Rear Door (12).



5. Counter Baseplate/Film Advance Baseplate/Shutter Baseplate.

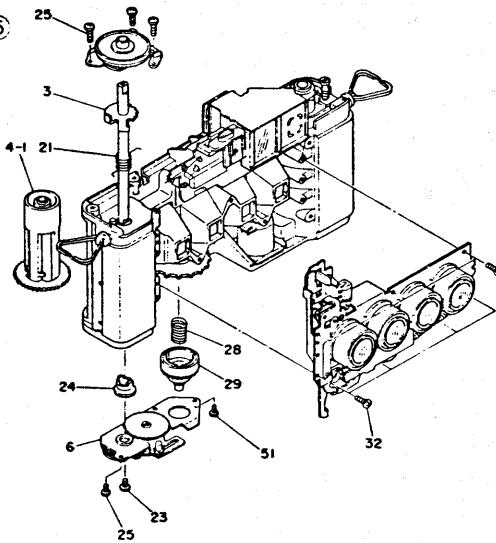
5-1 Remove 3 screws (25) and pull out Counter Baseplate (2) from Advance Ratchet (3).

5-2 Remove screw (23) and 3 screws (25) on the Advance Baseplate (6).

5-3 Take off Advance Baseplate (6), Spring (28), Gear (29) and Pinion (24).

5-4 Take off Advance Ratchet (3) and Spool (4-1).

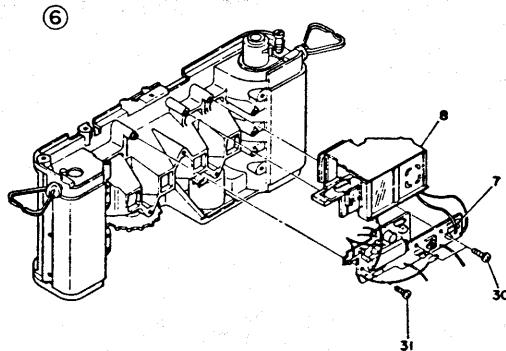
5-5 Remove 7 screws (32) from Shutter Base Plate and slowly remove the Base Plate from the body.



6. View Finder and P.C.B. 606.

6-1 Remove 3 screws (30,31) from the P.C.B. 606 (7).

6-2 Take off P.C.B. 606 (7) and View Finder (8) at the same time.



3) Inspection and Adjustment.

1. Film advance.

The film advance lever shall transport the film $78.0\text{mm} \pm 2.0\text{mm}$ in a single stroke. The film transport should operate smoothly. Without film in the camera, the torque required at the film advance lever shall be 816 grams/cm. With film in the camera, torque at the film advance lever shall not exceed 3,265 grams/cm.

2. Shutter release.

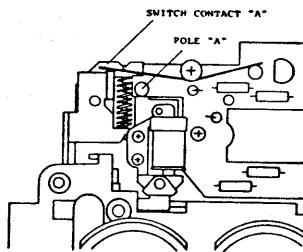
The shutter release button shall actuate in sequence the master switch (S1) controlling the electronics and the shutter release mechanism.

The shutter mechanism shall control initiation of the exposure timing switch (S2).

A. Master Switch (S1).

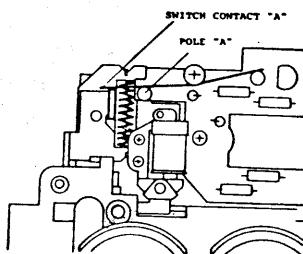
*Off:

Before pressing the shutter release button, the master switch (S1) contact should not touch the pole (A).



*On:

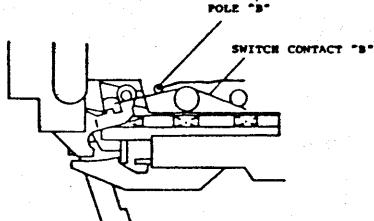
When pressing the shutter release button half way, the master switch (S1) contact should touch the pole (A).



B. Exposure timing switch (S2).

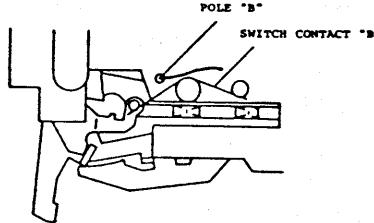
1. After cocking the shutter:

The Exposure timing switch (S2) contact should touch the pole (B).



2. After shutter release:

The exposure timing switch (S2) contact should not touch the pole (B).



C. Adjustment.

Adjustment is made by bending the switch contact.

Note: Clean up the switch contact and poles when adjusted.

3. Check of camera warning LEDs and marking LED.

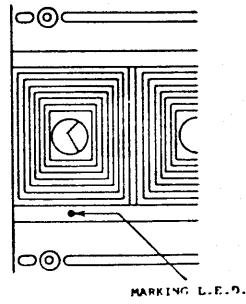
1. When checking the camera warning LEDs and marking LED, master switch (S1) must be in the "on" position (see Item 2.A.) and the exposure timing switch (S2) must be in the "After cocking the shutter" position (see Item 1.B.).

2. Short the following points with 400ohm resistor to check if an LED is defective.

- Red wire (L8), connecting to the Red LED in the finder, and ground (Camera die-cast body); the Red LED in the finder must light up.
- Green wire (L9 or L23), connecting to the Green LED in the finder, and ground (Camera die-cast body); the Green LED in the finder must light up.
- Yellow wire (L4), connecting to the marking LED ass'y, and Red wire (L1), connecting the battery housing; the marking LED must light up.

4. Marking LED.

The Marking LED shall expose a circular spot located in proximity of film advance area. The functional requirement is an image dot, in this location, of 1.0mm \pm 0.1mm diameter and red density of 0.85 minimum (including base) on Kodacolor II (ISO 100/21°) film processed in C-41 chemistry to Eastman Kodak Process Control Standard.



5. Exposure control:

The exposure controls of the camera shall be tested by actual measurement of the exposure in the focal plane.

5-1 Check and adjustment of Auto Exposure:

A. Check.

Required equipment: Light meter.....Spectron.
Power source....D.C. power supply
set at 4V with 15ohm internal
impedance.

Light Film	Level: Speed: Limit :	Light Film	Level: Speed: Limit :
LL 8 : : :	ISO	LL 7 : : 0+1EV :	ISO
LL10 : 100 : 0+1EV :		LL11 : 400 : 0+1.5EV :	
LL13 : : :		LL13 : : 0+2.0EV :	

B. Adjustment.

1. Set film selector of the camera at ISO 400 position.
2. Fix the camera to the Spectron and set the film speed dial of the Spectron at ISO 400 position.
3. Set Light Level of the Spectron at LL 7 and adjust the EV error by the Neutral Density Filter (8-11) within the range $0+0.6$ EV.
Note: ND filters are supplied as a spare parts range 0.1 - 1.0 by 0.1EV step.
4. Set the light level of the Spectron at LL11 and adjust the EV error by the VR1 on P.C.B. 606 within the range $0+0.4$.
5. Return to LL7 and check to ensure EV error at LL7 is still within the range $0+0.6$ EV. If so, continue to step #6, if not, repeat procedure from step #3 on.
Note: When check the EV error with Spectron, the Front Cover of the camera is always required.

6. Set the film speed selector both of the camera and the Spectron at ISO 100.
7. Check the EV error of each light level at LL 8, LL10 and LL13. If the value of ND filter (8-9-2) is correct (ND0.6), EV error should meet with the specification.

5-2 The Low-Light warning LED.

The Low-Light warning LED shall be activated by the exposure control circuitry according to the table below.

LED : Red LED must be : Green LED must be :
ISO : "on", at or below : "on", at or above :
100 : 97 cd/m ² : 256 cd/m ² :
400 : 28 cd/m ² : 56 cd/m ² :

The Red and Green LEDs shall not be on simultaneously, nor shall they be activated unless the shutter mechanism has been cocked.

6. Flash synchronization.

- A. The electronic flash synchronization delay circuit shall cause the flash to fire when the magnet release command is given.
- B. The Green LED shall override the Low-Light (Red) LED with an external signal from the "Opti-Lite", of +9V Max. When "Opti-Lite" is ready, 25 micro A Max. is applied to the signal contact of the flash connector.
- C. Voltage on the signal contact of less than 0.3V shall not override the Low-Light (Red) LED.

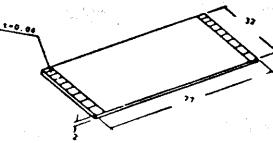
7. Lens collimation

Individual lens assemblies shall be focused on axis at a nominal object distance of $3.0\text{m} \pm 0.5\text{m}$ as measured at the film plane.

A. Adjustment of lens collimation.

1. Remove front cover.
2. Open the Rear Door and put a mirror, as shown in the drawing below, on the film rail and close the rear door.

Note: Provide with a front surface reflection mirror metal plate, 0.04mm thickness on the both ends of the mirror.

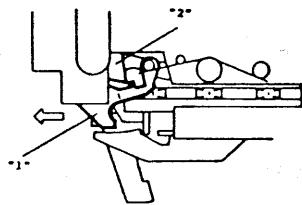


3. Open the shutter fully and check it with a 200mm collimator.
4. Get the sharpest point by turning the lens cell, then sparingly apply some adhesive to the screw.
5. After installing the Front Cover, recheck the lens collimation.

B. How to open shutter.

1. Cock the shutter.

2. Push the part No. 1 toward the direction of the arrow mark, then the latch, (part No. 2) will be free and the shutter will remain open.



4) Trouble shooting.

A. Cannot release the shutter.

1. Battery Voltage - Greater than 2.8V when measured between the master switch (S-1) and ground (die cast body) with switch closed.
2. Cocking Lever Spring (11-16) out of position or broken.
3. Battery contact in the Battery housing poor contact or broken.
4. Master Switch (S1)-weak contact efficiency.
5. Exposure timing switch (S2)-weak contact efficiency.
6. Lead wires (L 1, L 2, L 5, L 6) poor soldering or broken.

Determine if the View Finder L.E.D.s illuminate and check circuitry with electric meter.

Hook on or replace it.

Adjust or replace it.

Refer to the item 2-A of sheet No. 8. Clean up contact and pole.

Refer to the item 2-A of sheet No. 9. Clean up contact and pole.

Resolder or replace the lead wires.

B. Cannot cock the shutter.

- * Cocking Lever Latch Spring (11-20)-out of position or broken.

Hook on or replace it.

C. Cannot transport the film.

- * Spring on the Drive Cam (6-5) out of position or broken.

Hook on or replace it.

D. Advance lever will not stay in position after cocking.

- * Missed Exposure Prevention Spring on (6-7)-out of position or broken.

Hook it or replace it.

E. The ready light on the flash unit lights but Opti-Lite will not flash.

1. Flash unit will not flash using test button even when not mounted on the camera. Refer to the service manual for Optilite.
2. Screw (41) on the Accessory Shoe loose. Rescrew firmly.
3. Lead wire (L11)-poor soldering or broken. Resolder or replace it.
4. SCR1 on P.C.B. 606-poor soldering or short. Resolder or replace it.

F. Low-Light Warning LED in the view finder not functioning.

1. Lead wires (L 7, L 8, L 9 or L23) poor soldering or broken. Resolder or replace the lead wires.
2. LEDs poor connection or broken. Check sheet No.11 or replace them.

G. The Green LED does not override the Red LED when flash (Opti Lite) is ready.

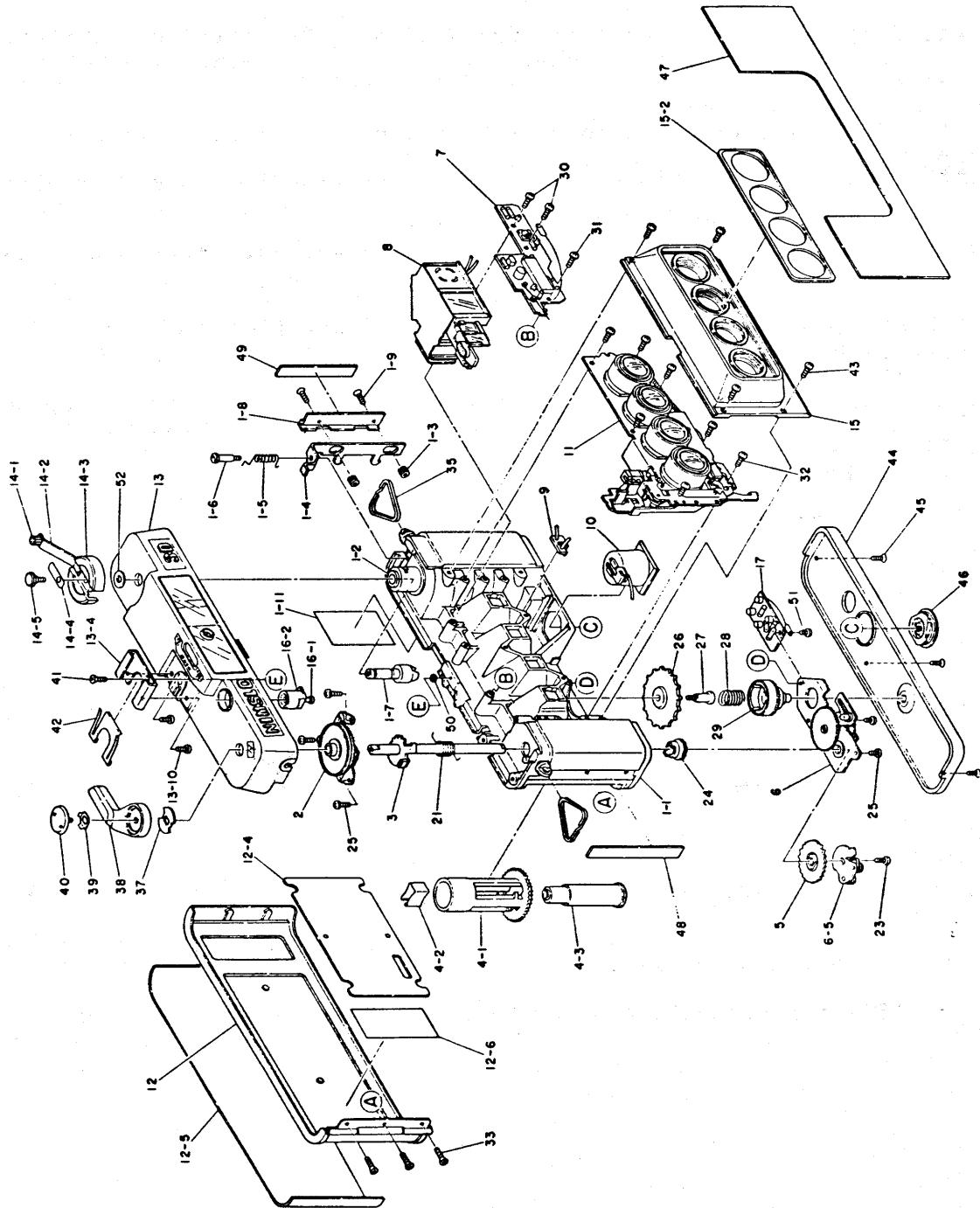
1. Flash unit not supplying the necessary external signal when the unit is ready. Refer to the service manual of Optilite.
2. Contact pin #2-poor contact Flash or Camera. Clean up the contact.
3. Lead wire (L10)-poor soldering or broken. Resolder or replace it.

H. Marking LED does not light.

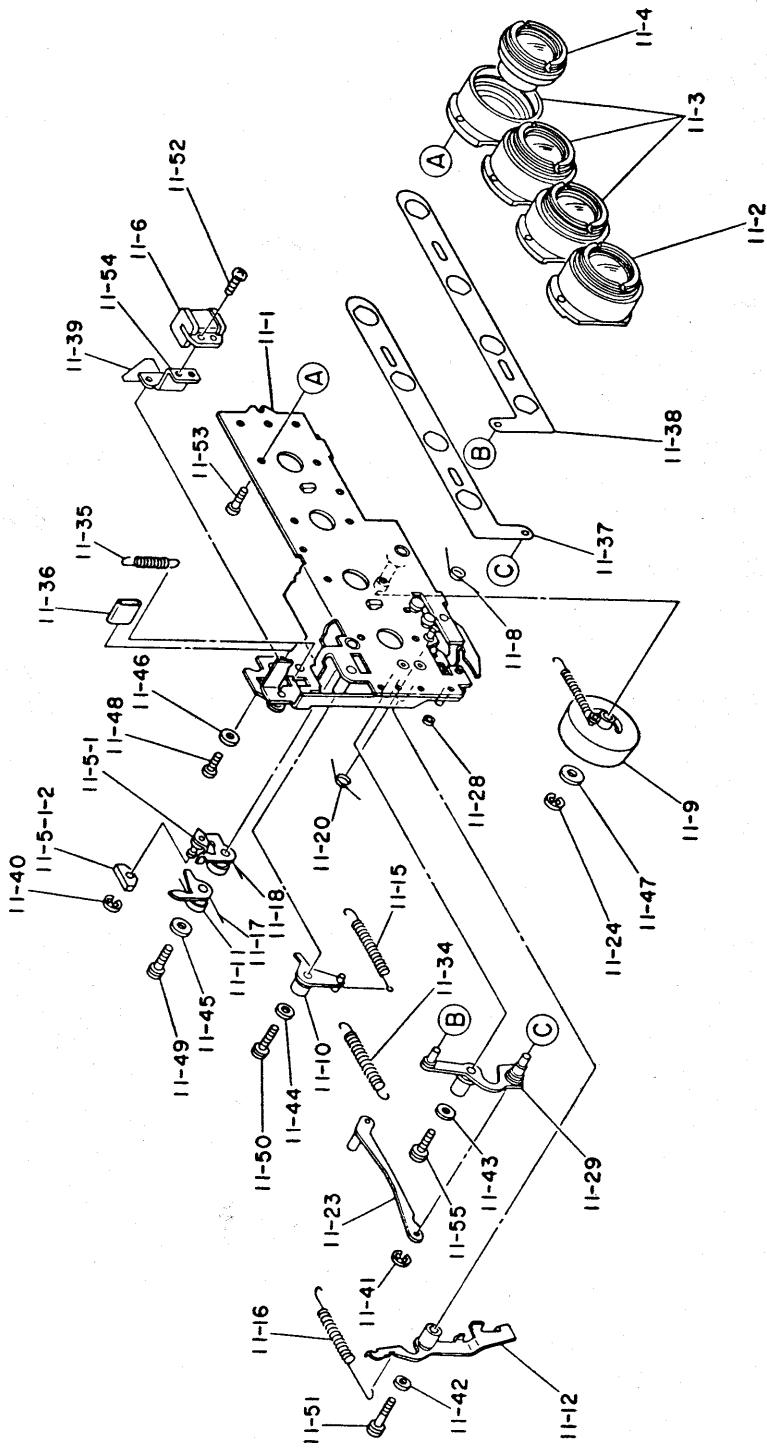
1. Lead wires (L4, L3 or L21) poor soldering or broken. Resolder or replace them.
2. LED-poor connection or broken. Check by the procedure (3-3-C) replace if necessary

5) Layout of Components.

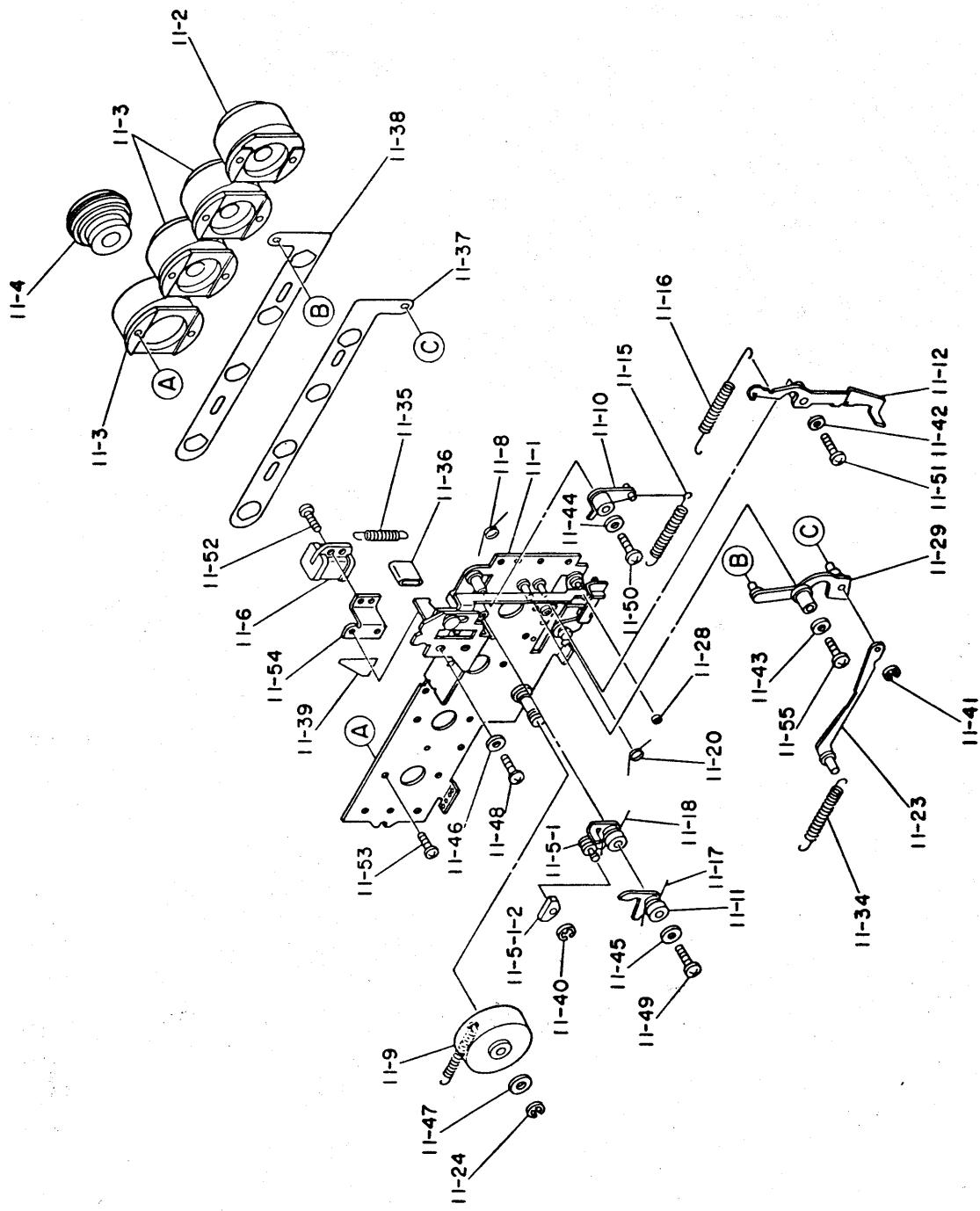
General Assembly



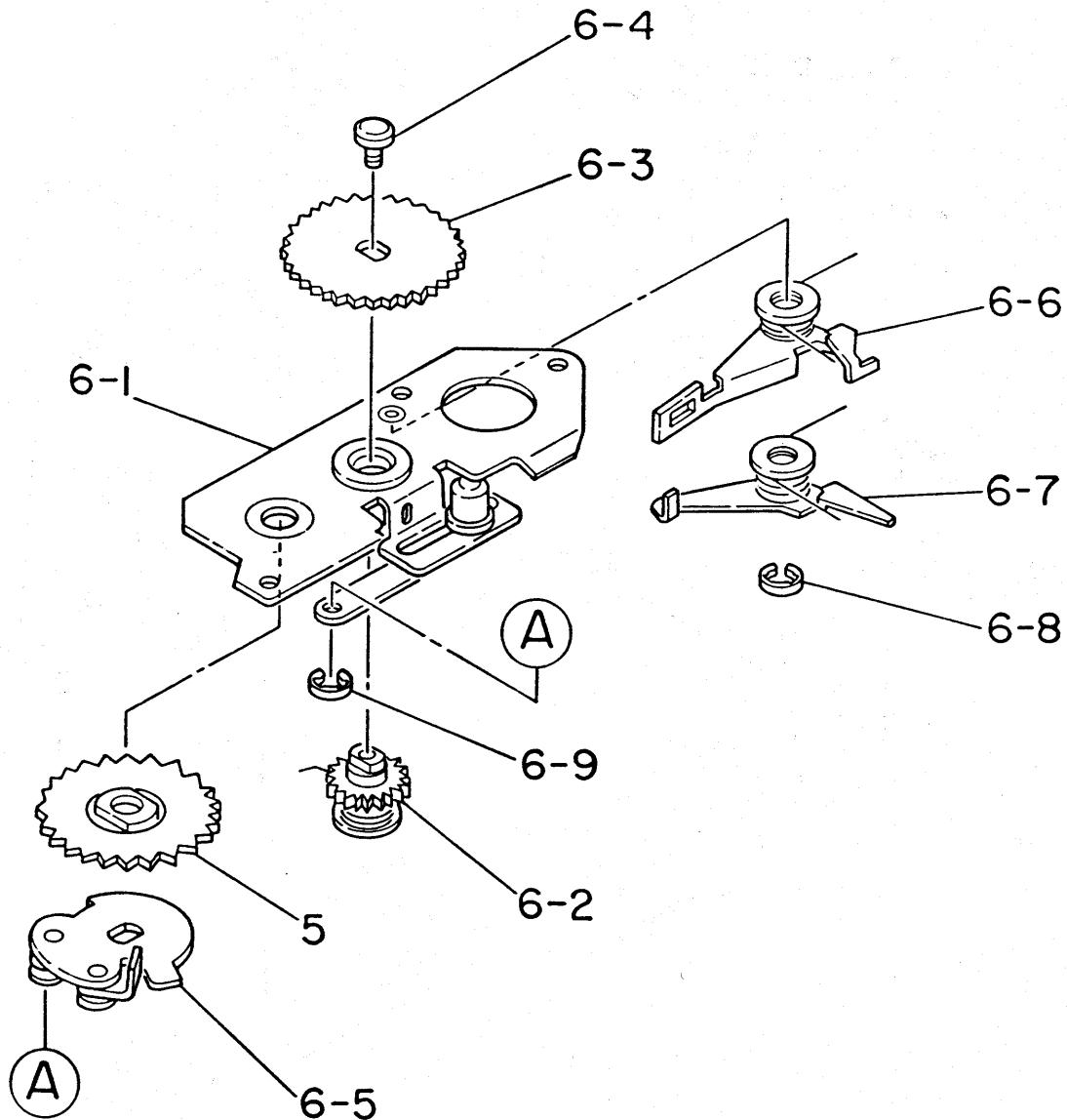
Shutter Base Plate (A).



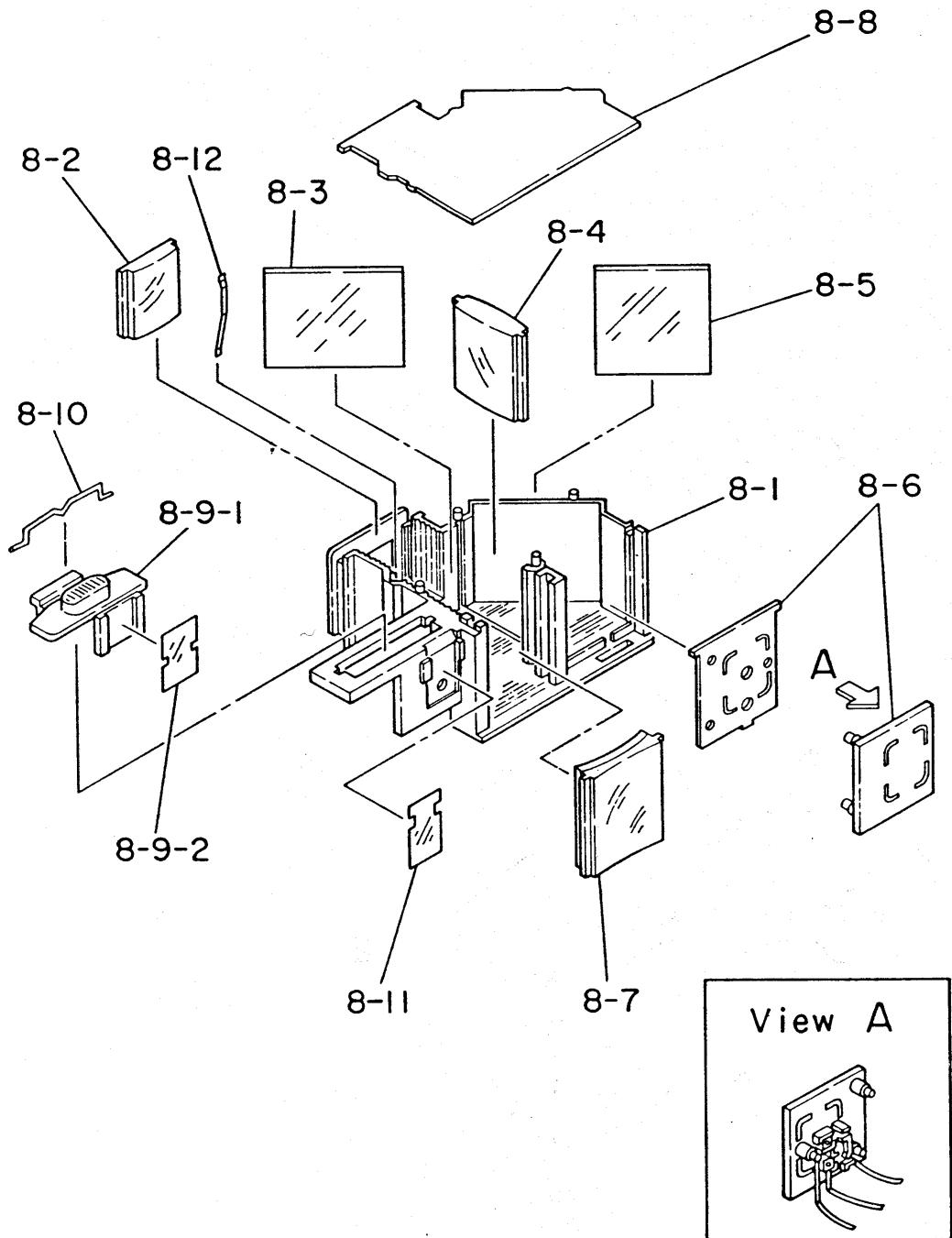
Shutter Base Plate (B).



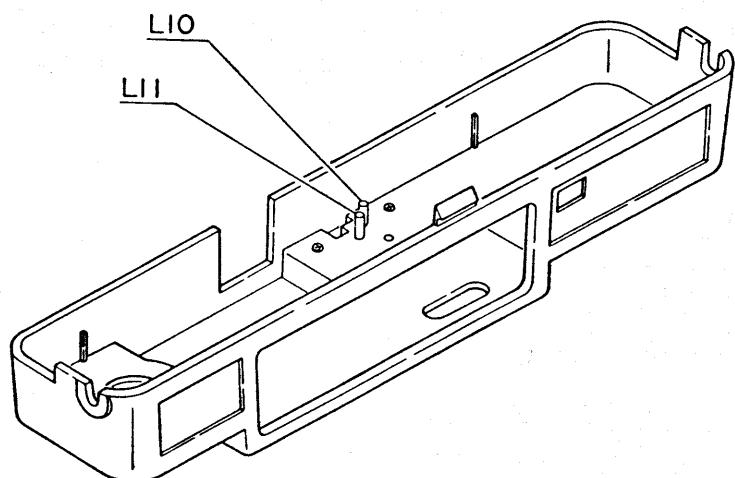
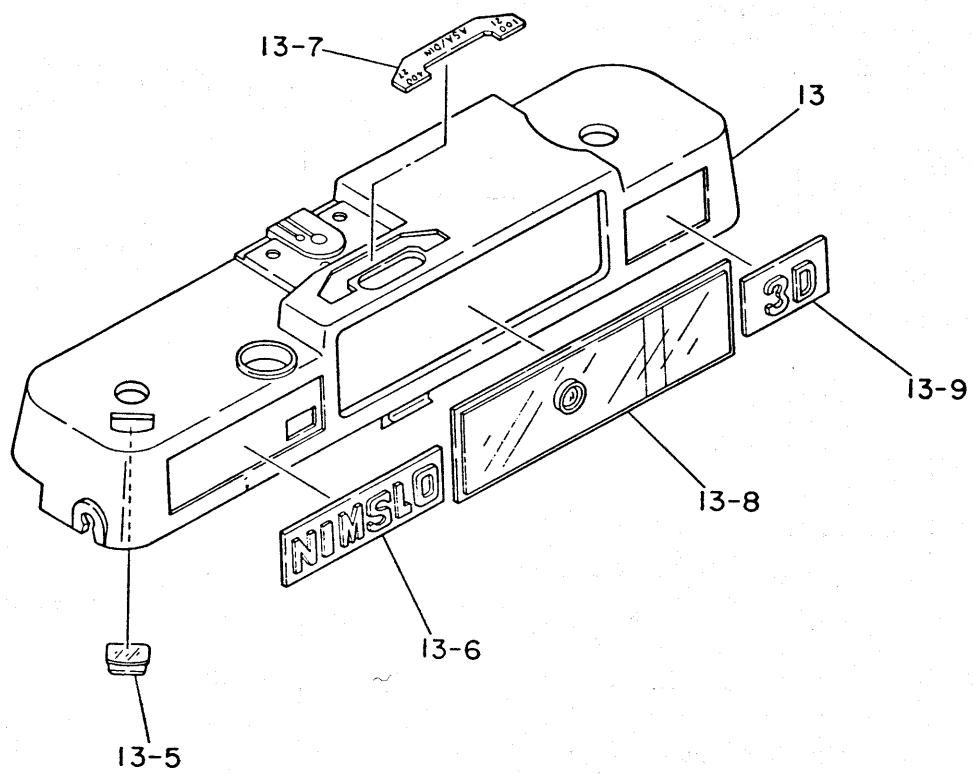
Advance Base Plate.



View Finder.

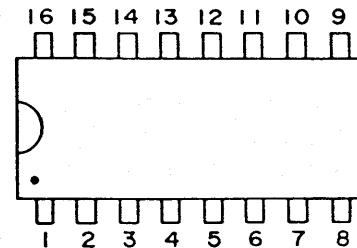


Top Cover.



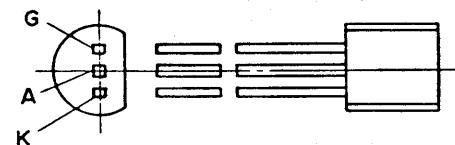
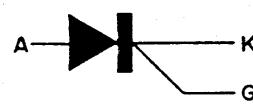
6) Component Designation.

IC - 1

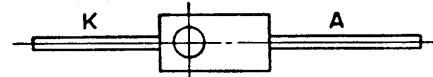


TOP VIEW

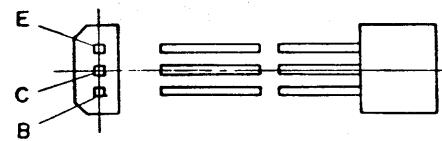
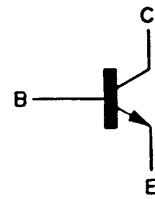
SCRI



LED 1,2,3

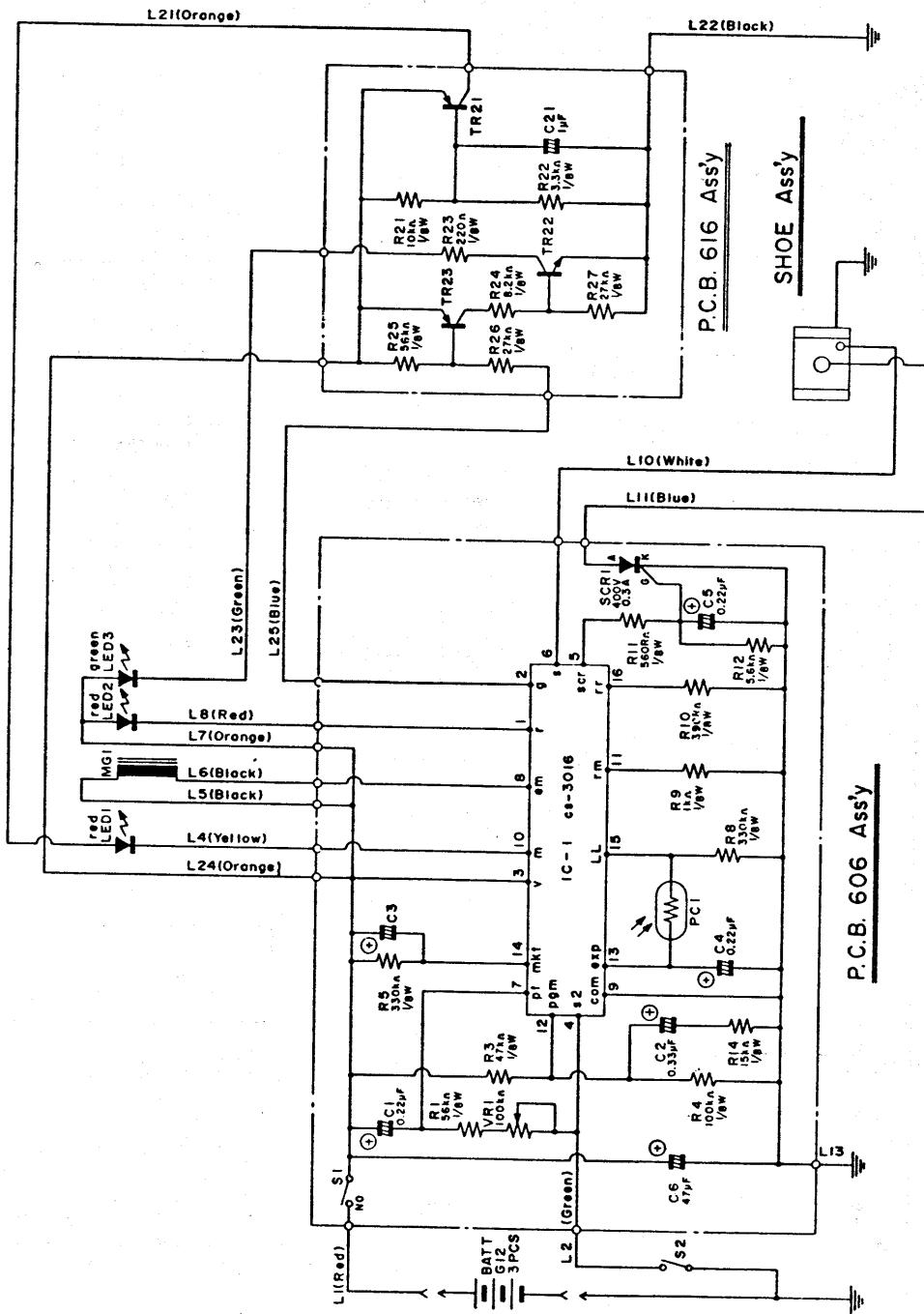


TR 21,22,23

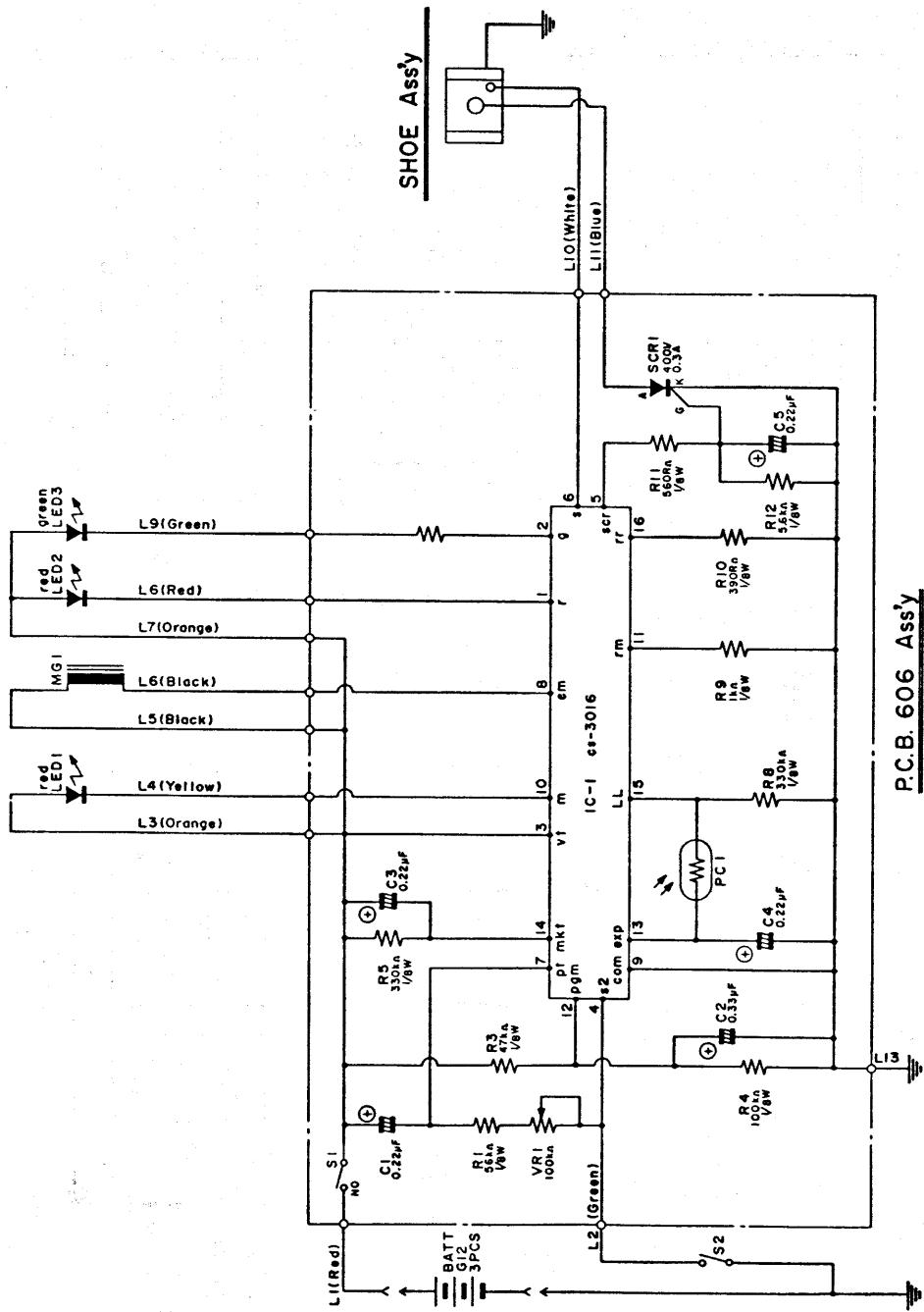


7) Circuit Diagram.

With P.C.B. 616.

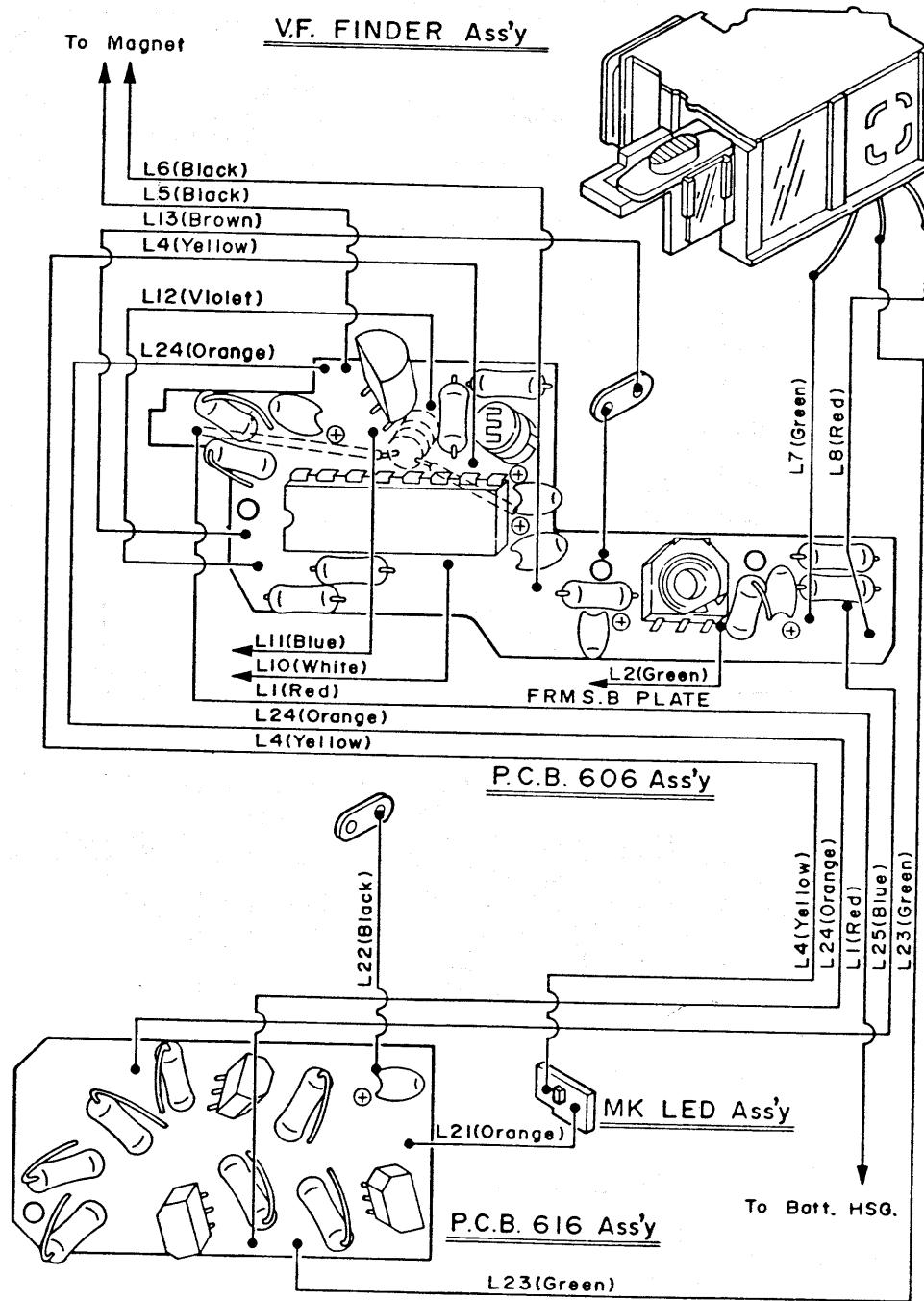


Without P.C.B. 616.

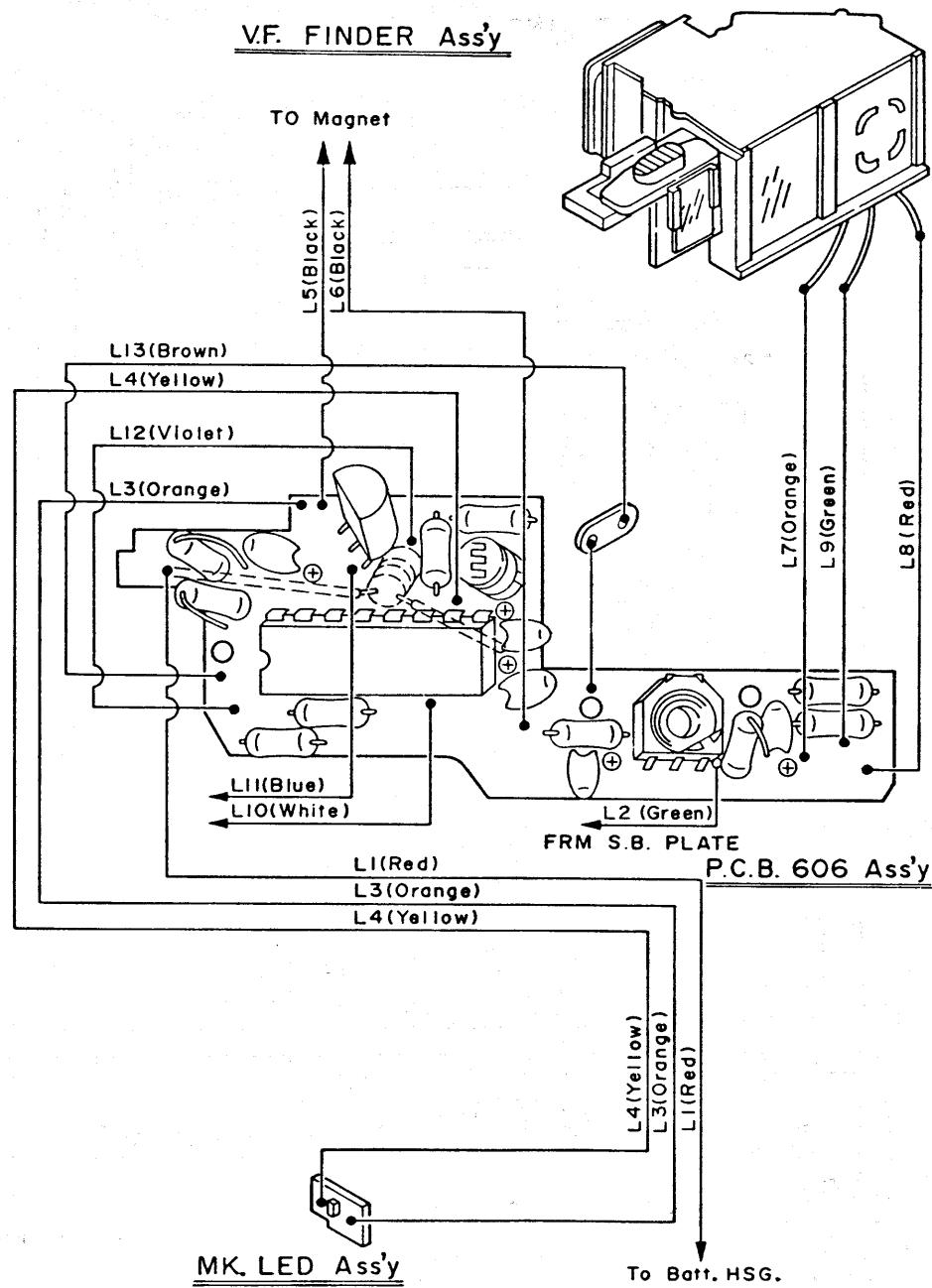


8) Wiring Diagram.

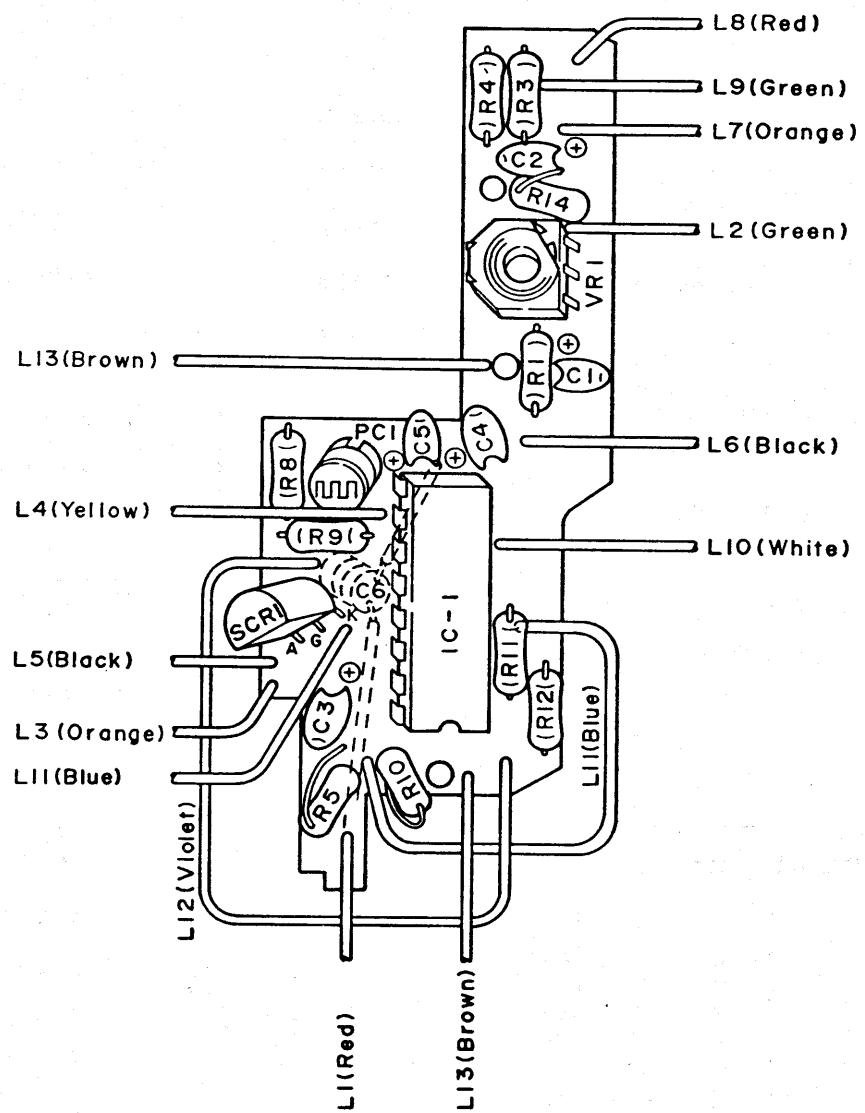
With P.C.B. 616.



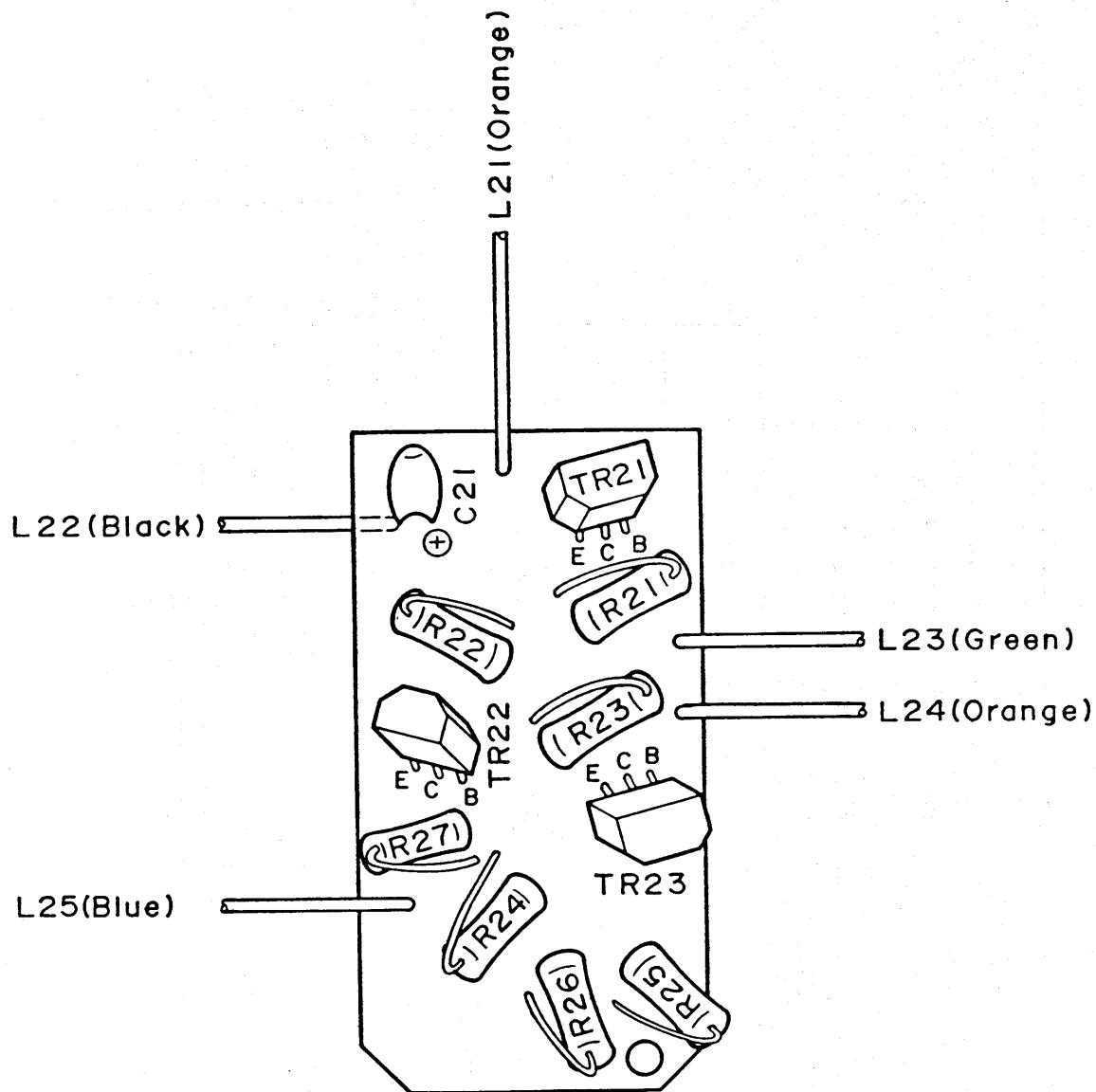
Without P.C.B. 616.



9) P.C.B. 606 Ass'y.



10) P.C.B 616 Ass'y.



11) Parts List.

1	DAZ0001A	ASS'Y BODY
1-1		BODY (MACHINED)
1-2		HOUSING REWIND SPINDLE
1-3	CAZ0001B	STUD-DOOR LATCH
1-4	PAZ0001F	DOOR LATCH
1-5	SAZ0001A	SPRING-DOOR LATCH
1-6	CAZ0002C	PILLAR-DOOR LATCH
1-7	CAZ0003C	SPINDLE-REWIND
1-8	PAZ0002D	PLATE-LATCH COVER
1-9	***	SCREW-M1.6X2.5L
1-10		STUD-VERTICAL GUIDE
1-11	DAZ0001D	LABEL-FILM PROCESS
2	DAZ0002A	ASS'Y COUNTER BASE PLATE
3	DAZ0003A	ASS'Y FILM ADVANCE RATCHET
4		
4-1	MAZ0003C	ASS'Y SPOOL
4-2	SAZ0005A	SPOOL-OUTER FILM
4-3	MAZ0004A	SPRING-SPOOL
		SPOOL-INNER FILM
5	DAZ0004A	ASS'Y CAM AND GEAR
6	DAZ0005A	ASS'Y FILM ADVANCE BASE PLATE
6-1	DAZ0015	SUB ASS'Y FILM ADVANCE BASE PLATE
6-2	DAZ0016A	SUB ASS'Y INTERMEDIATE PINION
6-3	CAZ0017A	GEAR-45 TEETH
6-4	***	SCREW-M2X0.4PH
6-5	DAZ0006A	ASS'Y DRIVE CAM
6-6	DAZ0018A	ASS'Y MISS EXPOSURE
6-7	DAZ0019A	ASS'Y REWIND RELEASE
6-8	***	"E" RING
6-9	***	"E" RING
7	EAA0022A	ASS'Y P.C.B. 606
7-1	EYL0013A	IC CS3016
7-2	ESS0013A	THYRISTOR 03P4M
7-3	EHC0001A	CDS MPY54C-679
7-4	ERC5637J	RESISTOR 56K ohm 1/8W
7-5	ERC4737J	" 47K ohm 1/8W
7-6	ERC1047J	" 100K ohm 1/8W
7-7	ERC3347J	" 330K ohm 1/8W
7-8	ERC3347J	" 330K ohm 1/8W
7-9	ERC1027J	" 1K ohm 1/8W
7-10	ERC3917J	" 390 ohm 1/8W
		IC-1
		SCR1
		PC 1
		R 1
		R 3
		R 4
		R 5
		R 8
		R 9
		R 10

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7-11	ERC5617J	RESISTOR 560 ohm 1/8W	R 11
7-12	ERC5627J	" 5.6K ohm 1/8W	R 12
7-13	ERC1537J	" 15K ohm 1/8W	R 14
7-14	ETC2243F	CAPACITOR 0.22MFD 10V	C 1
7-15	ETC3343F	" 0.33MFD 10V	C 2
7-16	ETC2243F	" 0.22MFD 10V	C 3
7-17	ETC2243F	" 0.22MFD 10V	C 4
7-18	ETC2243F	" 0.22MFD 10V	C 5
7-19	ECT4760A	" 47MFD 6.3V	C 6
7-20	EWC0239D	LEAD WIRES	L
7-21	EPZ0606C	P.C. BOARD PCB606	PCB1
7-22	ERV1040D	VARIABLE RESISTOR 100Kohm	VR 1
8	DAZ0007A	ASS'Y VIEW FINDER	
8-1	MAZ0010D	HOUSING-VIEW FINDER	
8-2	MAZ0011B	LENS-VIEW FINDER EYE	
8-3	BAZ0001B	MIRROR "A"-VIEW FINDER	
8-4	MAZ0012B	LENS-VIEW FINDER	
8-5	BAZ0002B	MIRROR "B"-VIEW FINDER	
8-6	DAZ0028A	ASS'Y FRAMING MASK	
8-7	MAZ0013B	LENS-VIEW FINDER FRONT	
8-8	MAZ0014B	TOP COVER-VIEW FINDER	
8-9-1	MAZ0015C	SELECTOR FILM SPEED	
8-9-2	PAZ0017B	FILTER CALIBRATION ND 0.6	
8-10	SAZ0012A	SPRING-DETENT	
8-11-1	PAZ0045B	FILTER CALIBRATION ND 0.1	
8-11-2	PAZ0044B	" "	ND 0.2
8-11-3	PAZ0046B	" "	ND 0.3
8-11-4	PAZ0047B	" "	ND 0.4
8-11-5	PAZ0048B	" "	ND 0.5
8-11-6	PAZ0049B	" "	ND 0.7
8-11-7	PAZ0050B	" "	ND 0.8
8-11-8	PAZ0051B	" "	ND 0.9
8-11-9	PAZ0052B	" "	ND 1.0
8-12	SAZ0023A	HALF SPRING	
9	DAZ0008A	ASS'Y MARKING L.E.D.	
10	DAZ0009A	ASS'Y BATTERY HOUSING	
11	DAZ0010A	ASS'Y SHUTTER BASE PLATE	
11-1		SUB ASS'Y SHUTTER BASE PLATE	
11-2		FLANGE-1ST LENS	
11-3		FLANGE-2ND, 3RD, 4TH LENSES	
11-4		ASS'Y OBJECTIVE LENS	
11-5	DAZ0027A	ASS'Y MAGNET LEVER	
11-5-1	CAZ0033B	KEEPER MAGNET	
11-6	EMM0002A	ASS'Y ELECTRO MAGNET	

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Sheet No. 30

11-7	NIL	
11-8	SAZ0013B	SPRING-TIMING SWITCH
11-9	DAZ0021A	ASS'Y FLYWHEEL
11-10	DAZ0022A	ASS'Y SHUTTER CLOSING LEVER
11-11	DAZ0023A	ASS'Y MAGNET RELEASE
11-12	DAZ0024A	ASS'Y COCKING LEVER
11-13	NIL	
11-14	NIL	
11-15	SAZ0014B	SPRING-SHUTTER CLOSING LEVER
11-16	SAZ0015B	SPRING-COCKING LEVER
11-17	SAZ0016B	SPRING-MAGNET RELEASE LEVER
11-18	SAZ0017B	SPRING-MAGNET LEVER
11-19	NIL	
11-20	SAZ0019C	SPRING-COCKING LEVER LATCH
11-21	***	SCREW-MAGNET MOUNTING M1.4X2L
11-22	NIL	
11-23	DAZ0025A	ASS'Y FLYWHEEL DRIVE LINK
11-24	***	"E" RING
11-25	NIL	
11-26	NIL	
11-27	NIL	
11-28	PAZ0030B	SLEEVE CUSHION
11-29	DAZ0026A	ASS'Y SHUTTER BLADE LINK
11-30	NIL	
11-31	NIL	
11-31	NIL	
11-32	NIL	
11-33	NIL	
11-34	SAZ0018C	SPRING-FLYWHEEL DRIVE LINK
11-35	SAZ0021A	SPRING-SHUTTER RELEASE SLIDE
11-36	ETT0221A	SLEEVE-INSULATION
11-37	PAZ0031C	BLADE-UPPER
11-38	PAZ0032C	BLADE-LOWER
11-39	GAZ0011A	PLATE-INSULATION
11-40	***	"E" RING
11-41	***	"E" RING
11-42	***	WASHER
11-43	***	WASHER
11-44	***	WASHER
11-45	***	WASHER
11-46	***	WASHER
11-47	PAZ0057A	WASHER-TEFLON
11-48	***	SCREW-M1.4X3L
11-49	***	SCREW-M1.4X3L
11-50	***	SCREW-M1.4X3L
11-51	***	SCREW-M1.4X3L
11-52	***	SCREW-M1.4X3L
11-53	***	SCREW-FLANGE MOUNTING M1.6X2.6L
11-54	PAZ0056A	HOLDER MAGNET BRACKET
11-55	***	SCREW-M1.6X3L

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Type: G-1B Camera

Sheet No. 31

12	DAZ0011A	ASS'Y REAR DOOR
12-1		SUB ASS'Y REAR DOOR AND HINGE
12-2	ZAZ0011A	FOAM-REAR DOOR
12-3		RIVET-REAR DOOR
12-4	DAZ0012A	ASS'Y PRESSURE PLATE/SPRING
12-5	CAZ0002B	TRIM REAR DOOR
12-6	GAZ0009A	LABEL-REAR DOOR
13	DAZ0013A	ASS'Y TOP COVER
13-1	MAZ0021C	TOP COVER
13-2		PIN-CONTACT #1
13-3		PIN-CONTACT #2
13-4	PAZ0060A	ACCESSORY SHOE
13-5	MAZ0022A	WINDOW-COUNTER
13-6	GAZ0003B	NAME PLATE-"NIMSLO"
13-7	GAZ0004B	LABEL-FILM SPEED
13-8	MAZ0023C	WINDOW-VIEW FINDER
13-9	GAZ0005B	NAME PLATE-"3D"
13-10	***	SCREW-M1.6X3.6L
14		ASS'Y REWIND CRANK
14-1	MAZ0025B	KNOB-REWIND CRANK
14-2	DAZ0014A	SUB ASS'Y REWIND CRANK
14-3	MAZ0024A	KNOB-REWIND
14-4	PAZ0043B	LEAF SPRING-REWIND KNOB
14-5	CAZ0054A	SCREW-REWIND KNOB
15		ASS'Y FRONT COVER
15-1	MAZ0026D	COVER-FRONT
15-2	GAZ0006C	PLATE-FRONT
16		ASS'Y SHUTTER RELEASE
16-1	MAZ0020B	PIN-CABLE RELEASE
16-2	MAZ0019B	BUTTON-SHUTTER RELEASE
17	EAA0024A	ASS'Y PCB 616
18	NIL	
19	NIL	
20	NIL	
21	SAZ0004A	SPRING-ADVANCE SPINDLE
22	NIL	
23	***	SCREW-M2X3L
24	MAZ0006A	PINION-SPPOOL DRIVE
25	***	SCREW-M1.6X3L
26	MAZ0005A	SPROCKET
27	CAZ0009A	SCREW-METERING SPROCKET

N I M S L O
Service Department
Technical Information

Type: G-1B Camera

Sheet No. 32

28	SAZ0006A	SPRING-METERING SPROCKET
29	MAZ0007A	GEAR-SPROCKET DRIVE
30	***	SCREW-M1.6X5.5L
31	***	SCREW-M1.6X3.5L
32	***	SCREW-M1.6X3L
33	***	SCREW-M1.6X2.5L
34	NIL	
35	SAZ0022A	SPLIT RING-STRAP
36	NIL	
37	PAZ0039C	KEY-ADVANCE LEVER
38	HAZ0004A	LEVER-ADVANCE
39	PAZ0040A	CLUTCH-STAND OFF
40	CAZ0052C	SCREW-ADVANCE LEVER
41	***	SCREW-M1.6X6L
42	PAZ0041A	LEAF SPRING-ACCESSORY SHOE
43	***	SCREW-M1.6X3L
44	MAZ0027C	COVER-BOTTOM
45	***	SCREW-M1.6X4L
46	HAZ0005C	CAP-BATTERY
47	GAZ0007A	TRIM-FRONT COVER
48	GAZ0010A	SHIM "B"
49	GAZ0008A	SHIM "A"
50	NIL	
51	***	SCREW-M1.6X25L
52	PAZ0061A	REWIND COLLAR

NOTE:

1. When you order the parts, please refer to ORDER #.
2. ORDER # for "****" is ASF0145D. All screws and washers under ORDER # ASF0145D will be supplied as "Screw kit". Cannot order screws or washers individually.
3. Cannot order the parts or assemblies if the parts or assemblies have no ORDER #. The parts without ORDER # may be staked or glued and cannot be taken off from the assemblies. The assemblies without ORDER # may be easy to assemble at service facility. In order to prevent shipping damage, we will supply the piece parts for the said assemblies.

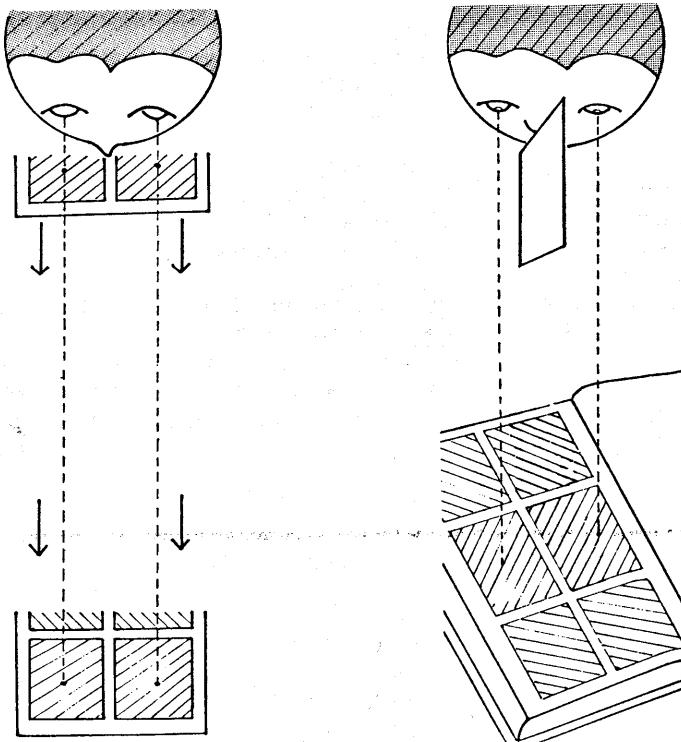
Additional Information

REPAIR SERVICE. There is currently no factory authorized Nimslo camera repair service. The following is the name of an independent repair service which used to have a contract with Nimslo, and is therefore experienced with the camera. They tell us that parts are not available, so they can only do repairs that do not require parts. The provision of this information does not constitute an endorsement by the authors.

Southeast Camera Repair
Attention: Steve Shultz
6051 Oakbrook Parkway
Norcross, Georgia 30093
Phone (404) 441-7700

Viewing 3-D without a Viewer

If you don't own a stereo viewer (see pages 18 and 20), the side-by-side 3-D examples in this book may be viewed as follows:



Draw the page slowly away from your eyes while fixing with each eye on the same prominent feature in each picture.

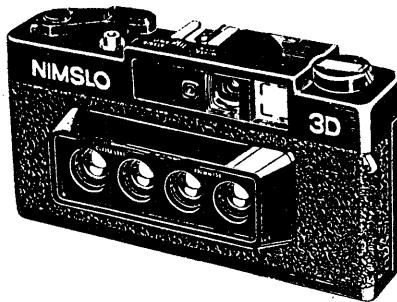
Hold a piece of stiff card at reading distance between your eyes and the page. This allows each eye to see only one image. Relax your eyes to bring them into focus.

\$11.95

Reel 3-D Enterprises' Guide to the Nimslo 3D Camera

This book gives tips on using the Nimslo 3D Camera to shoot the originally intended lenticular 3-D prints, but goes beyond that to explain in simple terms how to use it for other 3-D formats. Topics covered include 3-D slide making, making classic style 3-D print pairs, shooting Nimslo close-ups, using alternate film speeds, Nimslo camera modifications, and non 3-D uses for the Nimslo. Taking and mounting techniques are both covered. Technical Service Information and drawings are also included.

A VALUABLE REFERENCE FOR ANY NIMSLO 3D CAMERA USER!



About the authors:

Susan Pinsky APSA and David Starkman APSA have been known as a "stereo pair" since they published the 3-D hobbyist newsletter "*Reel 3-D News*" from 1978 to 1980. Requests from subscribers unable to find the necessary supplies for the pursuit of 3-D photography led to their producing a "*3-D Catalog*" offering a wide range of 3-D supplies and literature.

This 3-D duo are also active 3-D photographers, each having attained the status of 3-Star Exhibitor in international 3-D slide competitions sponsored by the Photographic Society of America. They are also members of the National Stereoscopic Association, The Stereoscopic Society, and the Stereo Club of Southern California, where Pinsky serves as Membership Director, and Starkman is a past President and current Equipment Director.

Pinsky is currently on the Board of Directors of the National Stereoscopic Association, and is the former Stereo Division Feature Editor for the Photographic Society of America "*PSA Journal*". Starkman is the Contemporary Stereo Editor for the National Stereoscopic Association's publication "*Stereo World*".

Both have offered editorial assistance and 3-D source materials for other books on 3-D, including "*The World of 3-D*" by J.G. Ferwerda, "*Amazing 3-D*" by Morgan & Symmes, "*3-D Past & Present*" by Wim van Keulen, "*Stereo Photography*" by Fritz Waack, and "*Fantastic 3-D*" by David Hutchison.

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