
99
HOPPY
INSTRUCTION MANUAL

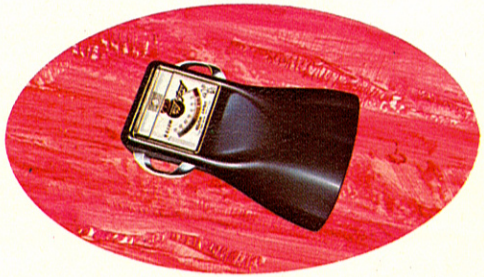
HOPPY

HOPKINS MANUFACTURING CORP.
428 Peyton Street
Emporia, Kansas 66801

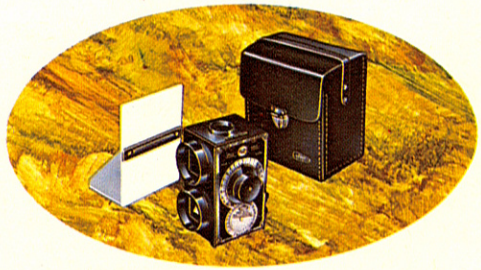
OTHER PRODUCTS

B4C1K3S LEV-L-LITE
For garage type headlamp aiming and inspection.

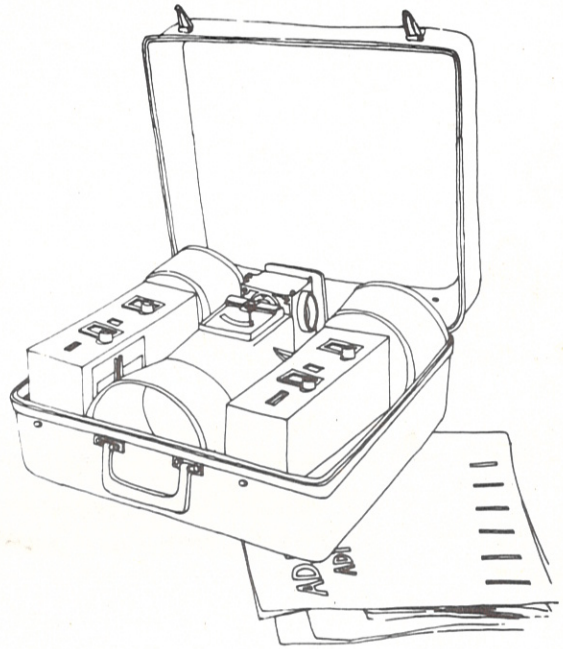
AL1 Q-VAC
For quality control of production line headlamp aiming.



C1 LITE METER
For measuring the candle power of headlamps.



G2 SPLIT IMAGE TRANSIT
For measuring level and incline surfaces.



LEV-L-LITE

INSTRUCTION MANUAL

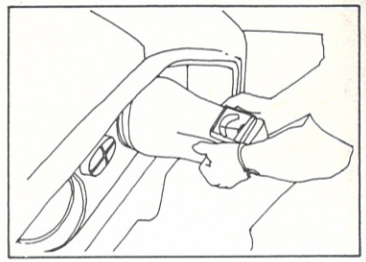
Form No. HMF-248

Printed in U.S.A.

CHECKING HEADLAMPS WITH THE LEV-L-LITE METER

Use bright lights when checking headlamps with Lev-L-Lite Light Meter. Place Lev-L-Lite Light Meter over headlamp. Meter should read about 31,000 on large 7" lamps or 25,000 on 5¾" lamps. If meter reads below 21,000 on 7" lamps or 18,000 on 5¾" lamps, something is wrong; possibly a defective battery, wiring, or headlamp.

NOTE: Check candle power requirements in your particular state.



TO ADJUST AIMER FOR FLOOR LEVEL

STEP 1. Select a flat area for aiming lamps. Area need not be level but must be flat. Drive car on selected area and place transit target at rear wheel. Either side of car.

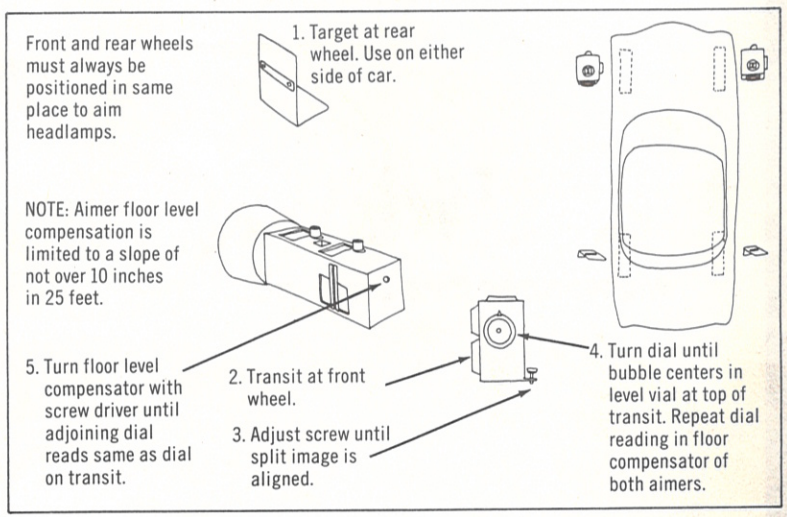
STEP 2. Place transit at front wheel—same side as target. Twist transit until target is visible.

STEP 3. Adjust screw on back of transit until split image is aligned.

STEP 4. Turn dial on side of transit until bubble is centered in level vial.

STEP 5. Turn floor level compensator on both aimers until adjoining dial reads the same as the plus or minus reading on the transit dial.

NOTE: Aimers can be used in additional locations by checking floor level at each location with transit and painting correction figure on floor.



TO AIM SEALED BEAM LAMPS

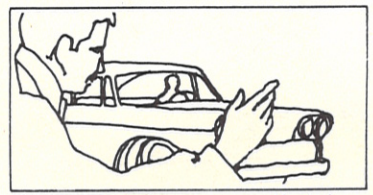
1. Locate car on floor surface to which aimer has been adjusted (see page 1).
2. Tire pressure should be equalized to that recommended by the manufacturer.
3. Car should be loaded as it will be driven most of the time. No extra load in trunk and no extra passengers.
4. Car should be rocked sideways to equalize springs.
5. Turn on headlamp units to make sure none are burned out.

NOTE: For the dual headlighting system, all four units should be on for upper beams and only the two Type 2 units should be on for lower beams.

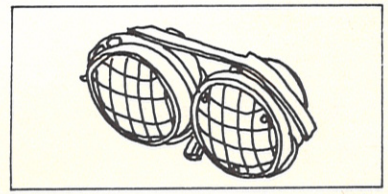
If filament of any lamp is burned out, replace lamp with a new sealed beam unit before aiming headlamps. Be sure to replace No. 1 lamp (2 prong connector) with No. 1. Replace No. 2 lamp (3 prong connector) with No. 2.

6. Turn off headlamps and aim in accordance with following procedure.

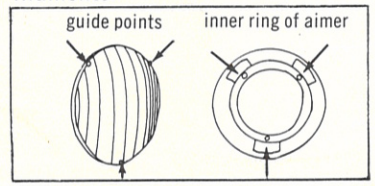
TO AIM 5¾" HEADLAMPS



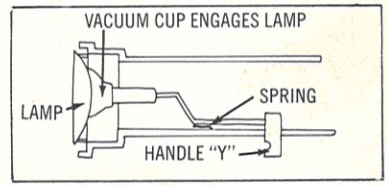
Drive car onto an area that has already been checked for floor level. Check and replace any headlamps with burned out filaments.



STEP 1 Remove bezel from headlamps if required for access to headlamp adjusting screws.



STEP 2. Clean headlamp lens with wet cloth. Position the aimers on opposite headlamps of the same type. Guide points must engage smooth steel inserts of aimer at points "X" and the "sight" openings on each aimer must point toward center of car.

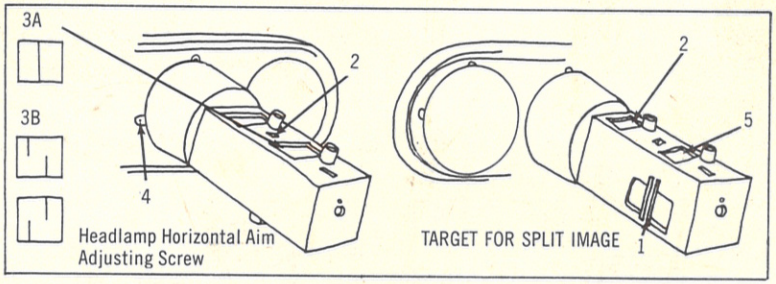


STEP 3. Secure Aimer to each headlamp by pressing handle "Y" forward until vacuum cup engages headlamp lens, then draw handle back until spring catches.

FOR HORIZONTAL AIM

STEP 4.

1. Be sure floor level compensator dial is set for specific aiming location (see page 1).
2. Check "Right-Left" dial on zero.
3. Check split image in viewing port. Rotate aimer slightly if necessary to locate target.
4. Turn headlamp horizontal adjusting screw until split image aligns as in 3A. To remove backlash, be sure to make final adjustment by turning screw in a clockwise direction.



5. Repeat above steps with opposite headlamp.

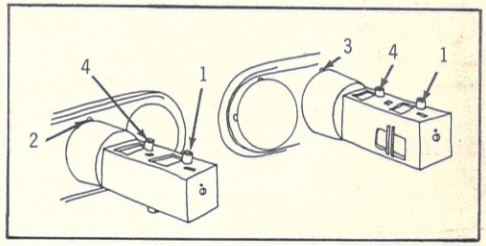
FOR VERTICAL AIM

STEP 5

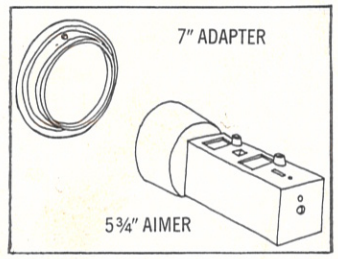
1. Turn knob at "Down-Up" dial until pointer is at 2 down. NOTE: For passenger cars, a "2 down" setting is generally required. For special settings including commercial vehicles consult your state laws.
2. Turn headlamp vertical aim screw counterclockwise until bubble is on "car side" of center. Then, turn screw clockwise until bubble is centered for correct aim and elimination of backlash.
3. Repeat operation 2 on the other headlamp.
4. Recheck target alignment on each side and readjust horizontal aim if necessary.

REMOVE AIMERS:

1. Hold aimer and release spring catch. For easy removal, push handle forward as far as possible to allow vacuum to drain.
2. Repeat steps 4 and 5 on other pair of headlamps.



TO AIM 7" SEALED BEAM HEADLAMP UNITS



The 5¾" aimer can be converted to aim 7" sealed beam units by attaching adapter ring. Follow steps one through five for 5¾" lamps to aim 7" lamps.

HEADLAMP CHECKING

Lamps may be quickly checked for "out-of-correct-aim" as follows:

STEP 1. Attach aimers to headlamps observing instructions given on pages 1, 2, and 3.

NOTE: Headlamp bezel need not be removed.

STEP 2. Right-Left Aim—Turn right-left aim knob until split image is in alignment. If right or left scale reads more than the following values, lamps should be reaimed.

	RIGHT*	LEFT*
Unidentified 7" and No. 1—5¾" Lamps	4	4
No. 2 Lamps	4	0

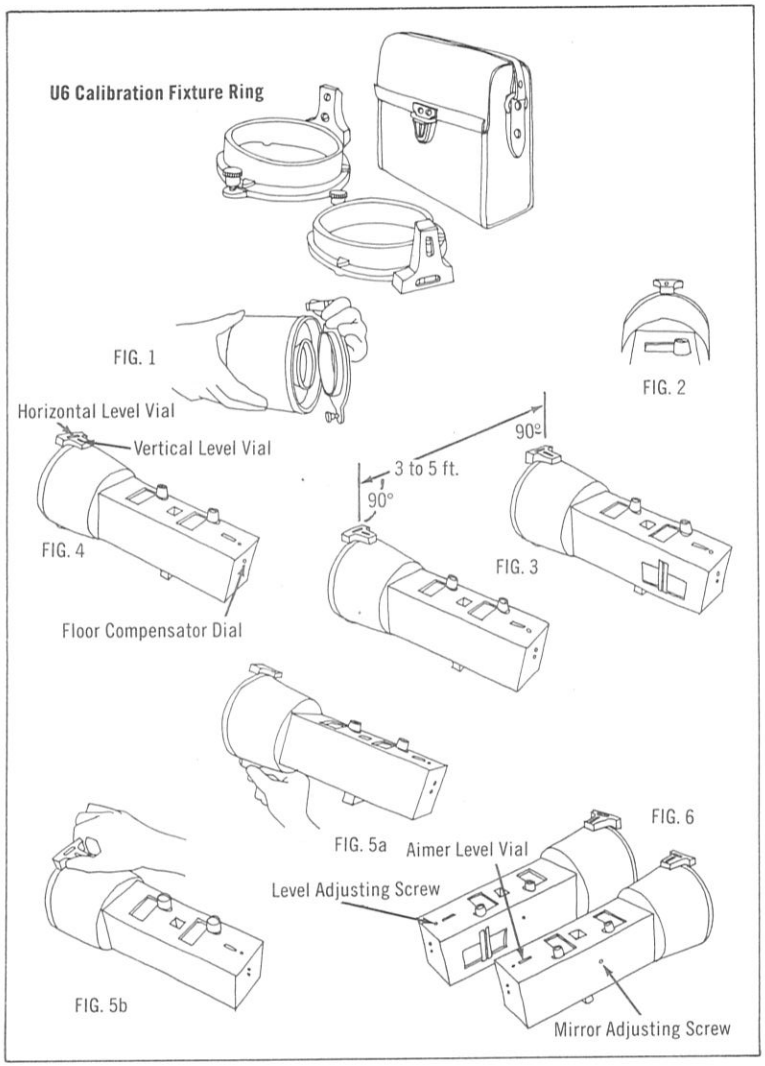
STEP 3. Down-Up Aim—Turn down-up knob until spirit level is centered. If down or up scale reads more than the following values for passenger cars, lamps should be reaimed.

	DOWN*
Unidentified 7" and No. 1—5¾" Lamps	½ to 3½
No. 2 Lamps	½ to 3½

NOTE: If the 5¾" Four Headlighting System is checked visually on a screen after being aimed by mechanical aimers, the Type 1 units should be checked for upper beam aim and the Type 2 units checked for lower beam aim. Since all four lamps are "on" for upper beam, the Type 2 units must be covered to check aim of Type 1 units.

The upper beam from the Type 2 units is generally higher than the Type 1 unit but should not be involved in the aiming of either lamp.

*If your state requirements differ from the above figures, always use local specifications. Values given represent inches at 25 feet.



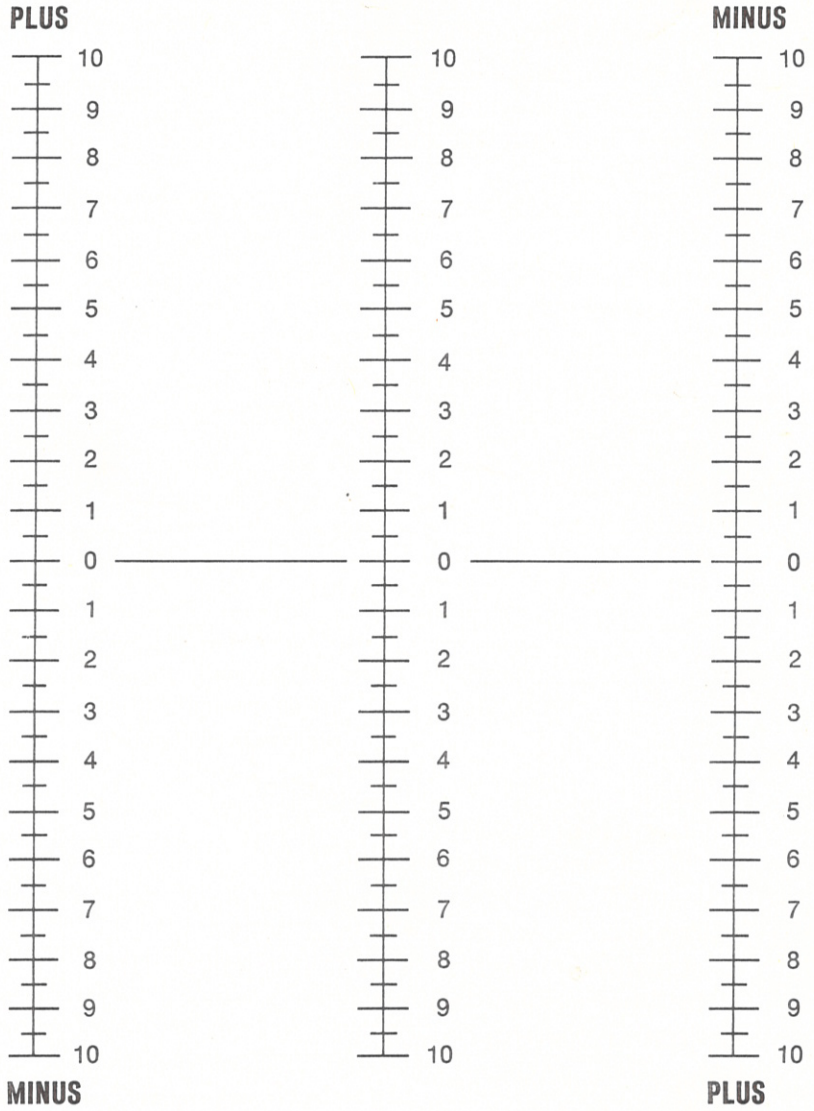
NOTE: Your aimers may get out of calibration through extended use. Calibration may be easily checked and adjusted by means of the U6 Field Calibration Fixture which is available as optional equipment through your local jobber. If you do not own the U6 Calibration Fixture, your Aimer accuracy should be checked periodically by your nearest authorized "Hoppy" repair station.

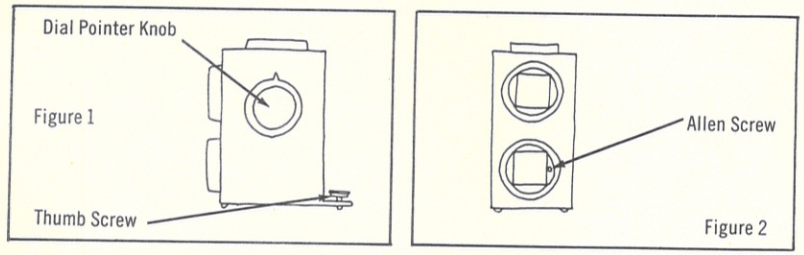
CHECKING AIMER FOR CALIBRATION

1. Snap the two fixture rings to the aimers (Fig. 1) with the top of each aimer centered to the top of each level head on the fixture rings. (Fig. 2)
2. Secure the aimers, with fixture rings attached, to a plate glass window by means of the aimer vacuum systems in the same manner as attaching the aimers to headlamps. The aimers should be spaced from 3′ to 5′ apart horizontally with targets visible through viewing ports. (Fig. 3)
3. Make sure the floor compensator dial of each aimer is set at zero. (Fig. 4)
4. Adjust the thumb screw of each fixture ring until its vertical level vial centers. (Fig. 5a) In turn, rotate each ring until its horizontal level vial centers. (Fig. 5b) Minor adjustments may be necessary for centering both level vials. Make sure both aimers maintain their original relationship to the fixture rings during these adjustments. (Refer to step No. 1)
5. Set the "Up-Down" pointer on each aimer at 2 down.
6. Using a small slot screw driver rotate the level adjusting screw of each aimer (if necessary) until each aimer level vial reads level. (Fig. 6) Re-check both fixture ring level vials to make sure that both rings have remained level during the calibration adjustments.
7. Set the "Right-Left" pointer at zero on both aimers.
8. If necessary, rotate the aimers on the fixture rings until opposite targets are clearly visible through the viewing ports. Make sure the fixture ring level vials remain level. Readjust if necessary. (Refer to step No. 4)
9. Using a small screw driver, rotate the mirror adjusting screw (Fig. 6) of each aimer (if necessary) until the split image aligns in each viewing port.
10. Both aimers are now calibrated for checking and aiming headlamps accurately. Remove both aimers from the plate glass window and the fixture rings from the aimers.
11. Reset floor compensator dial of each aimer as required.

CAUTION: If either calibration ring is dropped, its accuracy may be affected. A dropped calibration ring should be checked by your nearest authorized "Hoppy" repair station before re-using.

TRANSIT CALIBRATING CHART





CHECKING TRANSIT FOR CALIBRATION

1. Place transit and target 8 to 10 feet apart on a relatively flat surface such as a concrete floor.
2. Align transit to target by adjusting thumb screw (Figure No. 1) until split image target sections come together forming a single black line.
3. Rotate dial pointer knob (Figure No. 1) to where the transit level vial centers.
4. Record reading shown at dial pointer and show this number as plus or minus whichever it is.
5. Reverse transit and target locations repeating steps 2, 3 and 4.
6. If transit is in proper calibration the transit dial pointer will read zero in both locations, or will read a plus number at one location and a corresponding minus number at the opposite location. If transit readings vary more than plus or minus ¼ between the two locations, the transit is not in proper calibration and should be recalibrated.

TRANSIT CALIBRATING INSTRUCTIONS

1. Place a straight edge or ruler across the scales of the transit calibrating chart provided.
2. Referring to the numbers recorded in Step No. 4 of checking transit for calibration, place the straight edge on these numbers on the two outer scales (one number on each scale). NOTE: Make sure each number is set on its corresponding plus or minus section of the scales.
3. Read where the straight edge crosses the center scale.
4. Rotate the dial pointer knob (Figure 1) until the dial pointer reads plus whatever the number is as shown on the center scale.

5. Now, place the transit in the location reading either the more plus or the less minus in step No. 4 of checking transit for calibration. Place the target in the opposite location.
6. Adjust the thumb screw (Figure No. 1) until the level vial centers making sure dial pointer has not moved.
7. Using the Allen wrench provided, adjust the allen screw (Figure No. 2) until the split image target sections align. CAUTION: Be sure dial pointer is not moved and level vial remains centered during this operation.
8. Turn the dial pointer to its corresponding minus number.
9. Reverse transit and target locations and repeat Step No. 6.
10. If calibrating procedures have been followed without error, the split image target sections will show nearly aligned. If the split image sections are off more than the width of the black line, calibration check and calibrating procedures should be repeated. If the split image target sections align within the width of the black line, the transit is within calibration tolerances for accurate use.

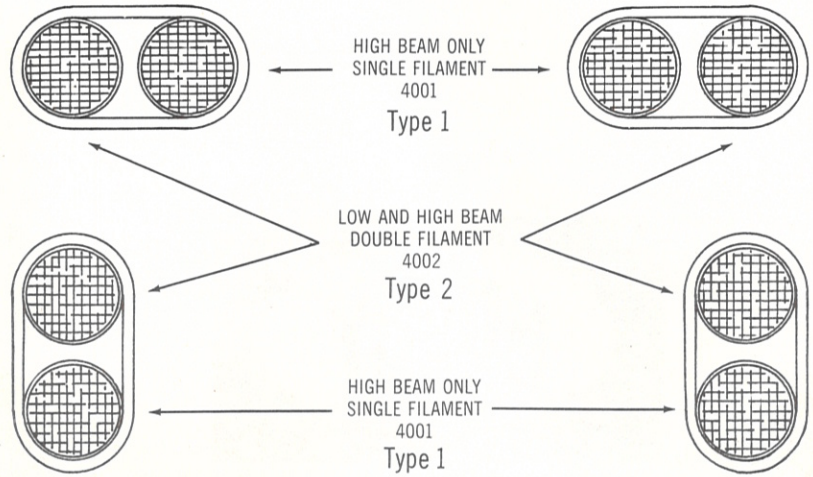
HOPPY

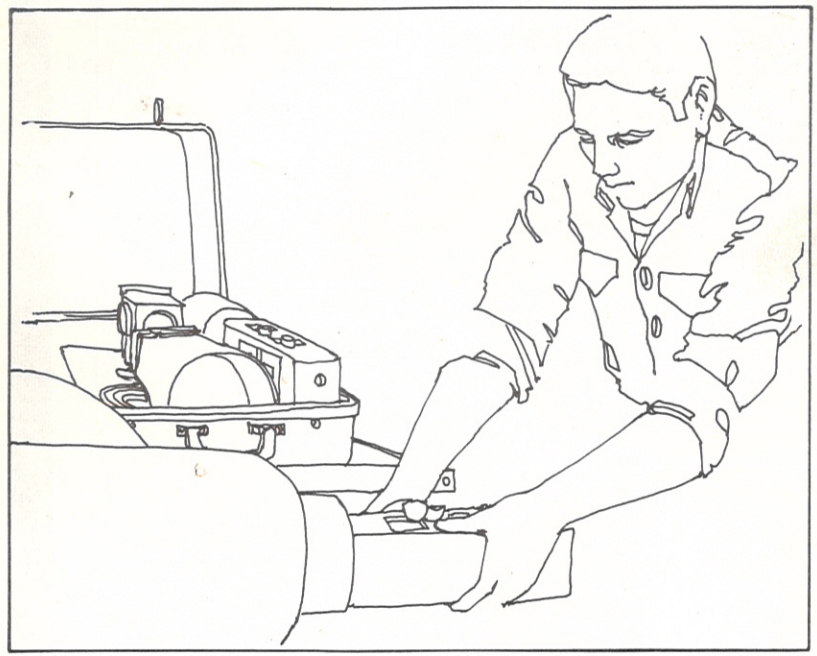
PARTS AND REPAIRS ARE AVAILABLE AT ALL AUTHORIZED "HOPPY" REPAIR STATIONS.

IF YOU LOSE YOUR REPAIR STATION LIST, A NEW AND UP-TO-DATE LIST MAY BE OBTAINED FROM HOPKINS MANUFACTURING CORP., 428 PEYTON STREET, EMPORIA, KANSAS 66801

A GUIDE TO SEALED BEAMS

12-VOLT FOUR HEADLAMP SYSTEM
LAMP DIAMETER 5¾"





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428 Peyton Street
Emporia, Kansas 66801

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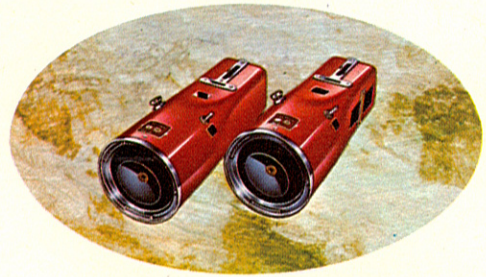
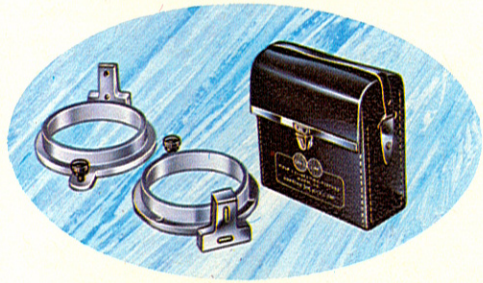
OTHER PRODUCTS

F5 VAC-U-LITE
For heavy duty production line headlamp aiming.



U6 LEV-L-LITE FIELD CALIBRATION FIXTURE
For keeping Lev-L-Lite headlamp aimers in calibration.



AA1 AN-OIL-IZER
For detecting harmful contaminants in motor oil.

AK1 PHOTO MECHANICAL COMPARITOR
For appraisal of headlamp beam patterns.