Film-Tech

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OWNER’S INSTRUCTION MANUAL

16mm Sound Projector

XENON

EX·3000·N
This Operator's Manual is easy to read, informative and helpful.
Please read it carefully. Before you try it your way, please try it our way.

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SPECIFICATIONS

Power source
Universal voltage: 100, 110, 120, 220, 240V, 50/60Hz

Power consumption
0.87kw

Lamp
New short-base 350w ozonefree Xenon lamp; 6000°K, 1000 hours.

Lamp brightness
1700 lumens

Exciter lamp
4V — 0.75A, BRK.

Standard lens
50mm (2") f/1.2, 6-element, coated.

Cinemascope lens holder
"C" size standard equipment ("D" size available).

Shutter
2 blade.

Construction
Modular.

Motor
Induction, with capacitor (plug-in module).

Film speed
24 fps sound. 18 FPS Available

Loop restorer
Automatic.

Control switch
Single rotary lockout switch for forward, reverse and lamp on/off.

Rewind
High speed. No reel or arm change required.

Reel capacity
2000 feet (6000 feet optionally available — supply and take-up — no rewind — deleting front cover with built-in speaker).

Speaker
One 8" speaker built into removable front cover, with 65' speaker cord. Separate 2-way speaker with 12" bass and 6.5" treble also available.

Sound
Optical or optical and magnetic.

Amplifier
Solid-state (plug-in module). 20w RMS continuous.

Tone controls
Separate treble and bass.

Wow & flutter
0.2% average combined weighted.

Size
14" x 12" x 14".

Weight
44 pounds (20kg).

Each projector is supplied with
Vinyl dust cover, cleaning kit, 9' power cord, 65' speaker cable and 2000' Eiki-matic take-up reel.
MAIN PARTS OF THE PROJECTOR

1. Handle
2. Arm lock
3. Supply arm
4. Film channel & rewind lever
5. No. 1 sprocket
6. Stop lever
7. Focus knob
8. Inching knob
9. Lens
10. Anamorphic lens holder
11. Framing lever
12. Pilot lamp
13. Automatic threading control lever
14. Loop restorer
15. Film trimmer
16. Elevator knob
17. Switch plate
18. Sound drum
19. No.2 sprocket
20. Tension guide roller
21. Take-up arm
22. Lamp house
23. Mirror case
24. Lamp house cover
25. Lamp focusing screws
26. Insulation cap
27. AC receptacle
28. Main power switch
28A. Lamp intensity switch

29. Lamp on (Reverse)
30. Reverse (On)
31. Stop (Off)
32. Forward (On)
33. Lamp on (Forward)
34. Magnetic playback
35. Optical playback
36. Microphone jack
37. Amplifier and volume knob
38. Treble control
39. Bass control
40. Function switch
41. Mag/Opt switch
(EX-3000N-2 only)
42. Rear cover
43. Reverse belt (Same as motor belt)
44. Main drive belt
45. Motor belt
46. Rectifier fan belt
47. Starter
48. Starter terminal (+)
49. Starter terminal (−)

50. Starter high voltage
51. Rectifier
52. Transformer
53. Voltage selector plug
54. Rectifier fuse (10A)
55. Flywheel
56. Motor
57. Motor condensor

58. Projection lamp
59. Mirror
60. Heat filter glass
61. Exciter lamp cover
62. Lamp terminal (+)
63. Lamp
64. Lamp house lock screw
SETTING UP THE PROJECTOR

1. Lift latch to remove front cover

(CAUTION:
If lamp has not been
installed proceed to the
lamp installation instruc-
tions first before operat-
ing the projector.)

2. Raise both reel arms until they snap in place.
3. Connect power plug to proper outlet.

4. Switch "ON" main power

5. Switch Lamp Intensity Switch to FULL position

6. To turn lamp on, rotate function switch to the FORWARD lamp on position.

7. Position projector for the appropriate size image as desired. Adjust elevator knob to achieve the required image height. (See chart below for appropriate lens, distance and screen size.)

### SCREEN SIZE CHARTS IN METERS

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8. It is recommended that the projector be operated at an elevation not to exceed ±10° off the horizontal axis.

9. Adjust focus for clean and sharply illuminated screen.

10. The lamp may be operated in either the FULL or HALF position depending upon the illumination requirements.
11. The extension 8” speaker located in the removable front cover may be placed near the screen and plugged into the jack marked "speaker" located on the front of the projector.

CAUTION: The 8 ohm speaker line must be maintained above electrical or earth ground to avoid a hum from a ground loop condition.
INSTALLING THE LAMP

DISCONNECT POWER CORD

1. Loosen lamp house LOCK screw.

2. Open the lamp house cover by pulling from the top edge.

3. Remove the 7mm nut from the anode (+) terminal as shown using the nut driver provided.

4. Unscrew the plastic cap from the cathode mounting terminal.

(CAUTION: XENON LAMPS ARE UNDER PRESSURE AND WILL EXPLODE IF HANDLED CARELESSLY. FINGERPRINTS ON THE GLASS MAY LEAD TO EARLY LAMP FAILURE AND/OR PICTURE DEGRADATION. THEREFORE, PROTECT THE LAMP WITH A CLOTH OR HANDLE IT BY THE METAL ENDS ONLY.)
5. Carefully remove the lamp from the carton.
6. Holding the lamp by the metal ends, remove the knurled thumb nut from the cathode (—) end.

7. With the fingers on the metal anode (+) end, insert the cathode (—) end into the center of the parabolic reflector.

8. The threaded cathode (—) end should now extend through the center hole in the rear of the reflector.
9. Rotate the lamp until the filler tube points up.
10. Locate the lug on the braided anode (+) lead and secure it to the anode (+) terminal using the 7mm nut previously removed.
11. Secure the anode (+) lead with the nut driver provided.
12. Position the braided anode cable (+) so that it forms a loop to the terminal away from the metal parts of the projector.
13. Screw the knurled thumb nut on the cathode end (—) securing the lamp in the reflector.
14. Should the glass have been touched accidently, clean the touched area with the alcohol moistened towel provided.
ADJUSTING THE LAMP FOCUS

1. Position the projector for a screen image of at least 1m (3') wide.
2. With no film in the aperture, turn on the projector and lamp.
3. Adjust the focus for a clean, sharply illuminated screen.
4. Loosen the lamp house lock screw.
   (CAUTION: Avoid looking directly at the Xenon lamp.)

5. Open the lamp house cover by pulling from the top edge.
6. Locate the three knurled lamp adjusting screws behind the reflector.
7. Turn the three adjusting screws, clockwise, one at a time until the maximum bright spot is located in the center of the screen.

8. Slowly turn each screw out, counterclockwise until the center bright spot is uniformly distributed over the entire screen with minimum reduction in brightness.

9. Once this adjustment has been made correctly, no further adjustment is necessary unless the lamp is removed or replaced.

(CAUTION: Focusing the bright spot through the lens for extended period of time may damage the lens.)
THREADING

1. Insert film in trimmer and cut. (Fig. A)

2. Turn function switch to FORWARD position (↑↓↓).

3. Push automatic threading control lever to SELF-THREAD position. Insert film leader into Film channel. (Fig. B) Film threads automatically.

4. When a gentle tug is applied to film coming off last roller, the automatic threading guides will release. (Fig. C)

5. When sufficient film has passed through projector to reach take-up reel, return the function switch to STOP.

6. Attach leading edge of film on to take-up reel.
PROJECTING

1. Turn function switch to FORWARD position ( ) and LAMP on position ( , ) and focus.

2. Frame film by adjusting the framing lever.
   (Fig. A)

3. Turn volume switch on and adjust tone controls for a clear, pleasing sound.

4. For pause, depress STOP LEVER (Fig. B).
   NOTE: Stop lever is intended for short term cuing only.

5. For REVERSE PROJECTION, turn function switch from STOP position to REVERSE ( ) and LAMP on Position ().

6. When film is completed, turn function switch to FORWARD-position ( ) and let motor run until all the film is on the take-up reel.
REWINDING

1. Attach tail end of film to the supply reel.

2. Move rewind lever DOWN to REWIND position (Fig. A) and turn function switch to REWIND (FORWARD) position (▲). After rewinding, FIRST return rewind lever UP to OPERATE position and turn function switch to STOP position.

3. After removing reels from the arms, depress arm locking buttons (Fig. B) and lower arms.
REMOVING THE LENS
(WITH ANTI-THEFT SCREWLOCK-U.S.A. only)

1. Swing open the lens holder and film gate.

2. Locate and remove the anti-theft screw.

3. The lens can now be removed by turning the focus knob until lens is free.

4. To reinstall the lens, reverse the above procedure. Telephoto and wide-angle lenses can be installed in the same manner except that they do not have the anti-theft screw.
**RECOMMENDED SPARE PARTS AND ACCESSORIES**

- **Spare Xenon Lamp**
  350 Watt UXL-351-E-O
  P/N 5107

- **Exciter Lamps**
  BRK/4V 0.75 amp
  P/N 5104

- **Fuse 2 amp (Exciter lamp)**
P/N F02-5020

- **Fuse 2 amp (Amplifier)**
P/N F02-6030

- **Microphone**
P/N 5460

- **Zoom lens attachment**
  (Continuously variable from 38mm (1-1/2") to 65mm (2-1/2") with standard prime lens)
P/N 5024

- **Anamorphic lens**
P/N 5030

- **Additional lenses**
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<table>
<thead>
<tr>
<th>ORDER #</th>
<th>ADDITIONAL LENSES AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5059</td>
<td>12.5mm (1/2&quot;) F1.4</td>
</tr>
<tr>
<td>5060</td>
<td>25.0mm (1&quot;) F1.5</td>
</tr>
<tr>
<td>5061</td>
<td>38.0mm (1-1/2&quot;) F1.5</td>
</tr>
<tr>
<td>5019</td>
<td>50.0mm (2&quot;) F1.2</td>
</tr>
<tr>
<td>5062</td>
<td>65.0mm (2.5&quot;) F1.5</td>
</tr>
<tr>
<td>5063</td>
<td>75.0mm (3&quot;) F1.8</td>
</tr>
<tr>
<td>5064</td>
<td>75.0mm (3&quot;) F1.8 Tele-cine Lens</td>
</tr>
<tr>
<td>5066</td>
<td>100. mm (4&quot;) F2.2</td>
</tr>
<tr>
<td>5024</td>
<td>Zoom Conversion Lens (.75 to 1.25 x Prime Lenses from 38mm to 75mm)</td>
</tr>
<tr>
<td>5067</td>
<td>Zoom lens (.75 to 1.3 x Prime Lenses from 25mm to 75mm)</td>
</tr>
<tr>
<td>5026</td>
<td>Wide-angle or Telephoto Conversion (.8 or 1.25 x Prime Lenses from 38mm to 75mm)</td>
</tr>
</tbody>
</table>
SPECIAL APPLICATIONS

A. USING PROJECTOR AS A P.A. SYSTEM
Using projector as a P.A. system, simply plug an accessory microphone into the amplifier mic jack.

Turn on the amplifier and adjust the volume and tone controls as necessary. 
NOTE: It is recommended that the P.A. mic be used with the projector plugged into the external speakers, and that the speakers be located away from the projector.

B. MAGNETIC SOUND TRACK PLAYBACK (EX-3000N-2 ONLY)
1. To reproduce a previously recorded magnetic sound track, turn the Opt/Mag switch to the (M) position. The projector may then be operated as usual.
C. 50HZ TO 60HZ CONVERSION
The standard EX-3000N projector is available either as 50Hz or 60Hz sound speed operation. It is possible to change frequency by simply shifting the motor drive belt.
DISCONNECT POWER CORD

D. UNIVERSAL VOLTAGE SELECTION
(1) Operating voltages for the projector may be selected from 100VAC to 240VAC.
(2) To select the most appropriate voltage, open the rear cover, by first loosening the two lock screws and opening the latch.

(3) Locate the voltage selector bracket, select the proper range by the location of the two pin nylon connector.
(4) Pull out the voltage selector plug, and re-position until the voltage value nearest the line voltage desired is displayed in the small notch.
E. SILENT FILM OPERATION
Standard models are supplied with 50/60Hz pulleys, and optional 18 fps silent pulley is available for silent film operation.

1. DISCONNECT POWER SUPPLY CORD.

2. Open rear cover, Turn inching knob, at the same time guiding the belt first to the smaller motor pulley, then to the larger shutter pulley.

3. To change back to sound speed reverse the procedure.

NOTE: 60/60HZ models do not have silent speed.
CLEANING AND MAINTENANCE

The EIKI projector has been designed to provide years of trouble free services.
All maintenance such as lubrications and adjustments should be referred to a qualified EIKI service technician.
To keep your projector looking and operating like new the following items should be checked and cleaned by the operator.
1. Lens — Clean with soft lens tissue.

2. Film gate and aperture plate — Remove and clean with a soft brush.
3. Film rollers — Clean with isopropyl alcohol and wipe dry.
4. Sound focus lens — Brush or blow off dust and lint.
5. Projector: Wipe off with a damp cloth and keep closed when projector is not in use.
   The front elevated feet should always be up before transporting or storing the projector.
Do not oil or lubricate any part of this projector. Refer to your authorized EIKI dealer.
# OPERATOR TROUBLESHOOTING GUIDE

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power to motor or lamp (Pilot lamp not on)</td>
<td>1. Be sure projector is plugged in and the outlet has power&lt;br&gt;2. Check power cord&lt;br&gt;3. Check main power switch</td>
</tr>
<tr>
<td>Motor runs but film doesn’t advance</td>
<td>1. Motor belt off or broken&lt;br&gt;2. Check position of stop lever</td>
</tr>
<tr>
<td>Motor runs too fast or too slow</td>
<td>1. Belt not on the correct motor pulley</td>
</tr>
<tr>
<td>Motor runs, film advances, lamp does not come on</td>
<td>1. Function switch not in lamp position&lt;br&gt;2. Defective lamp&lt;br&gt;3. Check lamp rectifier circuit breaker&lt;br&gt;4. Check 10 amp lamp supply fuse&lt;br&gt;5. Defective lamp supply-Refer to authorized EIJI dealer</td>
</tr>
<tr>
<td>Won’t thread properly</td>
<td>1. Film channel and rewind lever not in the operate position&lt;br&gt;2. Film gate not properly closed&lt;br&gt;3. The automatic threading control lever not pushed to the thread position&lt;br&gt;4. Film not trimmer</td>
</tr>
<tr>
<td>No sound (Exciter lamp on)</td>
<td>1. Amplifier volume control not turned up&lt;br&gt;2. On magnetic playback models make sure switch is in the correct position&lt;br&gt;3. 2 amp amplifier fuse defective</td>
</tr>
<tr>
<td>No sound (Exciter lamp not on)</td>
<td>1. Amplifier volume control not turned on&lt;br&gt;2. Defective exciter lamp&lt;br&gt;3. 2 amp exciter lamp fuse defective&lt;br&gt;4. Amplifier not plugged in</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CHECK</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Poor sound</td>
<td>1. Check position of volume control</td>
</tr>
<tr>
<td></td>
<td>2. Check position of tone controls</td>
</tr>
<tr>
<td></td>
<td>3. Check for correct exciter lamp (BRK)</td>
</tr>
<tr>
<td></td>
<td>4. Check for dirt in the solar cell</td>
</tr>
<tr>
<td></td>
<td>5. Check film, may be defective</td>
</tr>
<tr>
<td></td>
<td>6. Clean exciter lamp</td>
</tr>
<tr>
<td></td>
<td>7. Incorrect exciter lamp</td>
</tr>
<tr>
<td></td>
<td>8. Speaker defective</td>
</tr>
<tr>
<td>Poor picture</td>
<td>1. Clean film gate and aperture</td>
</tr>
<tr>
<td></td>
<td>2. Clean lens with a soft tissue both front and rear</td>
</tr>
<tr>
<td></td>
<td>3. Refocus lens</td>
</tr>
<tr>
<td></td>
<td>4. Film may be defective</td>
</tr>
<tr>
<td>Poor Illumination</td>
<td>1. Lamp incorrectly aligned (See lamp adjustment procedure)</td>
</tr>
<tr>
<td></td>
<td>2. Defective lamp</td>
</tr>
<tr>
<td>Excessive lamp flicker</td>
<td>1. Defective lamp</td>
</tr>
<tr>
<td></td>
<td>2. Incorrect projector elevation</td>
</tr>
</tbody>
</table>
IMPORTANT SAFEGUARDS

When using your EIKI 16mm projector, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions.

2. Close supervision is necessary when any equipment is used by or near children. Do not leave projector unattended while in use.

3. Xenon lamps are under extreme pressure. Care must be exercised when installing or removing the lamp. Do not remove while hot. Refer to lamp installation instructions.

4. Do not operate projector with a damaged cord or if the projector has been dropped or damaged — until it has been examined by a qualified service technician.

5. Do not let the cord hang over edge of the table or counter or touch hot surfaces.

6. If an extension cord is necessary, a cord with a suitable current rating should be used. Cords rated for less amperage than the projector may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

7. Always unplug projector from electrical outlet when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.

8. Let projector cool completely before putting away. Return cord to cord storage space provided when storing projector.

9. To protect against electrical shock hazards, do not operate this projector in the rain or when wet.
IMPORTANT SAFEGUARDS (cont'd)

10. To avoid electric shock hazard, do not disassemble this projector, but refer to a qualified service technician when service or repair work is required. Improper repairs or reassembly can cause electric shock hazard.

11. Do not remove lamphouse cover when projector motor is running.

12. Observe the caution plate by rear cover latch “DISCONNECT POWER SUPPLY BEFORE OPENING”.

13. Do not look directly at an operating lamp with unprotected eyes.

SAVE THESE INSTRUCTIONS