Film-Tech

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Laser Audio

A) Adjustment of the solar cells

1. Distance between Cells and film

- Loose slightly the two bottom hollow screws (C) of the solar cell holder.
- Now you can move the complete holder in direction to the film path or back.

Be sure that the rear front end of the holder does not touch the sound drum.
The correct distance is 1mm (0,4 inch) or a little less. This corresponds with the inner side of the sound drums wall .

- Fasten the srews correctly after the adjustment is finished.

2. Adjustment of the height

- Take a long Allen wrench (3 mm) to loose slightly the central screw (D) at the base of the solar cell holder.
- Now it is possible to rotate the complete solar cell holder.

The light slit has to be centered vertically to both light pipes in front of the solar cells.

- Fasten the central screw (D) tightly.

3. Lateral adjustment (channel separation)

The solar cell holder is mounted over a guide bolt on the base plate of the sound unit. Moving the complete holder over this guiding changes the lateral position of the solar cells relatively to the sound track.

- Loosen or remove the protecting sheet for the cable connection if needed.
- Loosen the two hollow screws (E) on the right hand side to give the guide bolt free.
- Rotation of the hollow screw (F) moves the complete holder lateral.
- Fasten the screws (E) again and the lateral position is fixed.

B) Laser adjustment

1. Buzz Track

The mounting block for the complete Laser is guided over two bolts fixed on the base plate of the sound unit. The monting block, and together with it the Laser, can be lateral adjusted gliding on these guide bolts to change the Buzz Track.

- Loosen the hollow screw (G) slightly, on the left hand, rear side of the mounting block.
- Loosen the two hollow screws (H) on the top side of the mounting block.
- Now the lateral position of the block (Laser) can be changed by hand or more precisely using the excenter tool (3), which fits to the great bore hole between the two hollow screws (H) on the top side.
- Fasten the screws (G/H) again.

2.Azimuth

- Put the ring (1) on the objectiv tube in way that, that the small excenter pin (1) can be put through the cutout into the mounting block.
- Fasten the ring tightly on the tube.
- Hold the excenter tool in place using a screw (K) placed on the upper right hand corner of the front side of the mounting block.
- Loosen the two hollow screws (L) on the front side of the mounting block slightly.
- The azimuth adjustment can be made rotating the excenter pin with an Allen wrench from the right side.
- Fasten the hollow screw (K) tightly and the azimuth is fixed.

Let the tools mounted, if you want to adjust the focus without changing the azimuth again. Make sure that there is space between the ring and the mounting block, so that the tube can be shifted for the later focus adjustment.

3. Focus

- Loosen the hollow screws(L) slightly.
- Plug in the excenter tool (2, long one) into the front bore hole between the screws.
- Rotate the excenter to adjust the focus.

Use an Audio Analyzer and a Pink Noise loop.

- Watch the signal damping at 16 KHz and adjust for minimum damping.

Perhaps a readjustment of the azimuth is nesessary. It is recommended to use an oscilloscope in parallel (xy position). In this way both parameters can be observed in parallel.

- Fasten the screws tightly and remove the tools.

4. Slit height

The slit height is fixed. No adjustment is needed.

C) Trouble Shooting

No light slit on the film

Please check:

- projector running
- projection flap open
- laser power supply o.k., green lamp on the front panel

If this is o.k. exchange the Laser.

- Remove the cover plate of the Laser and the bottom covering metal sheet.
- Disconnect the cable for the power supply of the Laser directly in the sound unit.
- Loosen the hollow screw (A) on the upper side of the Laser housing and pull the housing back to the left..
- Put a new Laser from the left side onto the housing of the optics until it stops.
- Make sure that the top of the screw (A) fits to the above guiding slot of the optics housing.
- Plug the power supply cable again to the female connector.

Regard the orientation plug/socket. Exchange does not matter, but the Laser will not work.

- Run the projector

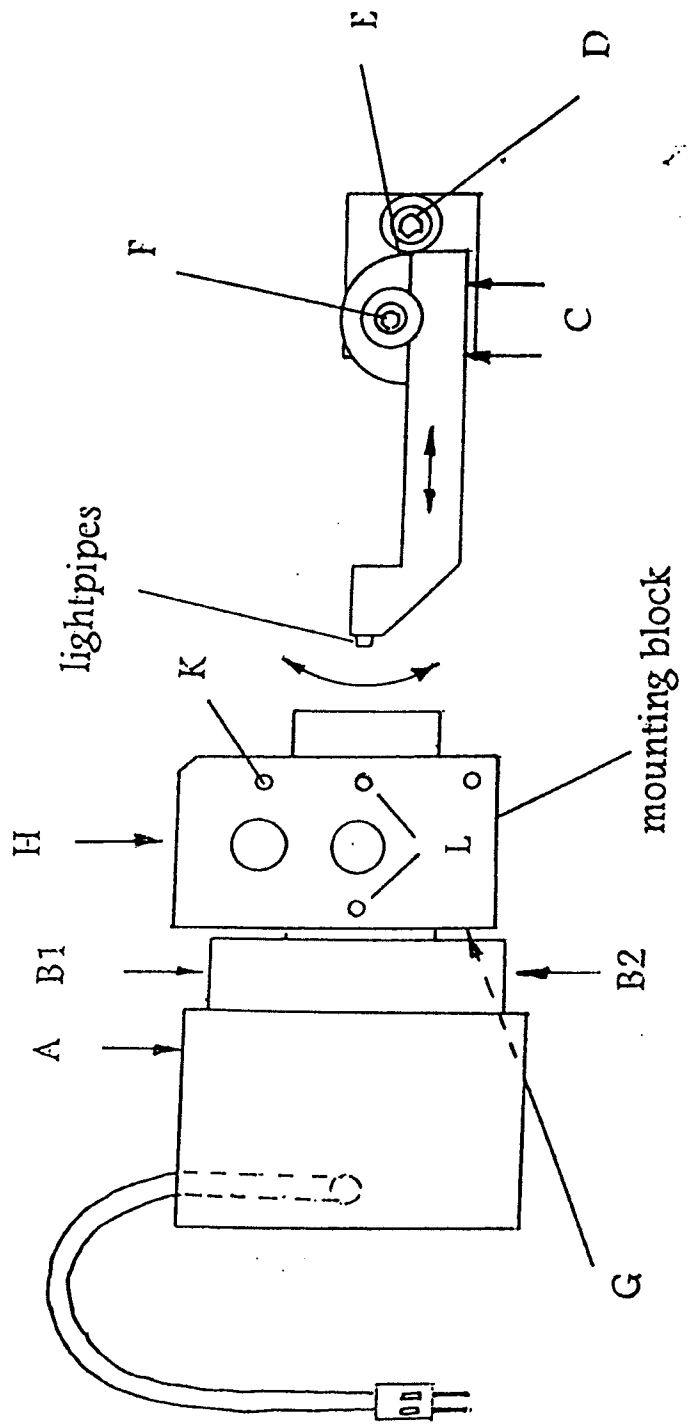
If the light /signal is weak, the optic has to be adjusted.

- Loosen the lower slit screw B2 slightly (half turn left)
- Adjust for highest signal level (you can observe the illumination)by rotating the upper hollow screw B1 clockwise or counter clockwise.
- Fasten the slit screw B2 again.

You can check the correct adjustment more precisely if you observe the diffraction of light between the front objectiv of the Laser and the film surface. Put a sheet of paper in the light path vertical to the direction of light. You will see the center light beam and above and below the diffration beams with smaller intensity. It looks like the light spreads into the focuspoint. This pattern should be symmetrically.

- reassemble the covering sheets.

Schematical Drawing

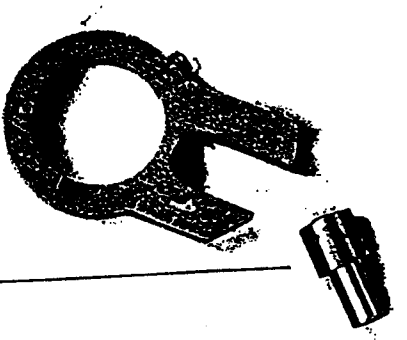


Laser Audio Sound

Tongerät/ Sound Unit

Werkzeug zur Justage
Tools for Adjustment

1 = Einstellring/ Ring



1 = Exzenterstift/ Excenterpin

2 = Exzenterwerkzeug, lang/ Excenter Tool, long

3 = Exzenterwerkzeug, kurz/ Excenter Tool, short

6 = Inbusschraube (K)/ Hollow Screw

WIRING TABLE

D-Connector PIN	SCART-Plug	Signal Name
1		N/C
2		N/C
3		N/C
4	20	TTC
5	17	TC GND
6	19	FTC
7	15	TSC
8	13	SC GND
9	16	FSC
10		N/C
11		N/C
12		N/C
13		N/C
14	7	VIDEO 0
15	5	GND
16	10	+15V
17	11	VIDEO 1
18	9	GND
19	8	-15V
20		N/C
21		N/C
22		N/C
23		N/C
24		N/C
25		N/C
to CP 65/CP 500	3	+ anal.Audio left
	6	- anal.Audio left
	1	+ anal.Audio right
	2	- anal.Audio right
	4	anal.Audio shield