Liesegang

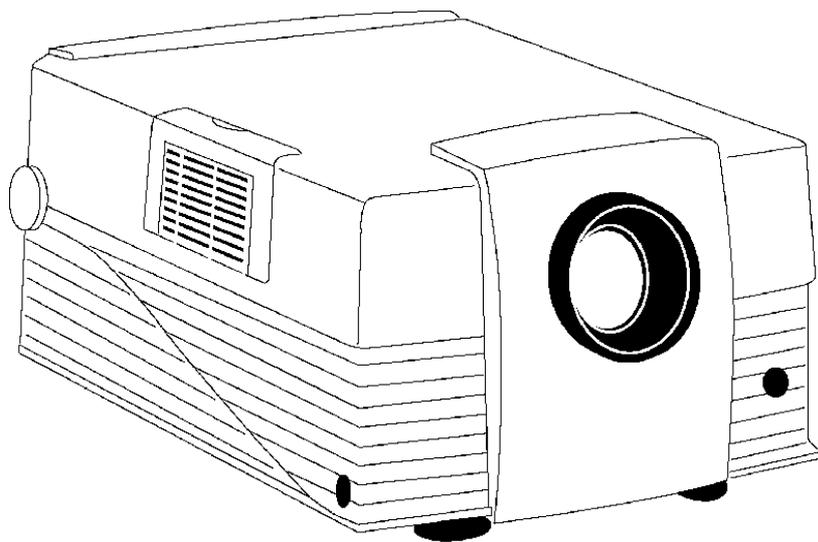# **Liesegang** dv 610

Bediener-Handbuch
User Manual - Mode d'emploi - Istruzioni per l'uso
Guía del operador - Manual do Usuário

Preface

The manual describes the Liesegang 6.4" TFT Data Video Projector. Please read through this operator manual carefully before starting your projector.

Your projector is easy to use and enables computer data to be projected in natural colours at conferences, seminars or anywhere where pictures, graphics and texts are to be made accessible to a wider audience. This manual aims to provide the reader with an introduction to connecting and operating the projector to achieve maximum success for your presentation.

The projector can be controlled from either the built-in keyboard or the infrared remote control. All settings are menu-guided and the help texts are available in many languages. The current parameters are shown on the display.

Functions used frequently, such as brightness or volume controls for video projections, can be executed directly from the remote control without calling up the menu system.

Due to its comprehensive range of automatic functions, the projector relieves the user of much of the work of adaptation to the computer, screen card and mode of display, most tasks being reduced to a simple key press. For this very reason we recommend you familiarize yourself with all of the controls of the projector and read through the section entitled **Tips for Data Projection** in particular before making your first presentation.

Faulty settings or incorrect connection of the projectors can lead to impairment of the functions of the display and the connected equipment. Only use the original adapter and connection sets suitable for your computer and monitor.

Should you have any questions or doubts please contact your dealer who will gladly pass on your request to the manufacturer if necessary.

1.   Scope of delivery

The standard equipment includes:

1 TFT-LCD projector with 800x600 pixels resolution
1 dust cover
1 connection cable for VGA/ SVGA analogue, 15 - 15 pin, M/M
1 mouse cable, 9 pin - 9 pin, F/F
1 PS/2 mouse adapter
1 infrared remote control with 2 batteries
1 mains cable,
1 user manual
1 video connection set consisting of:
     1 video cable, RCA M/M 75 Ω
     1 audio cable, double, RCA mini plug
     1 S-VHS cable
     1 SCART-RCA adapter

Important note

The projector features its own electronic multi-range power supply with automatic switching. It must only be operated with 100 V - 130 V or 200 - 240 V AC with a frequency of 50 Hz to 60 Hz. The unit must only be connected to a properly installed network with protective conductor. Please check immediately whether the supplied mains cable is compatible with the mains sockets on-site. Please contact your supplier if a different power supply cable is required for use abroad.

## 2.   Quick Setting Up

2.1   Setting Up the Projector

These instruction are intended to get you going fast. If you have any problems, refer to Appendix 3.

To avoid damage to the equipment, all power to projector and input sources must be turned off during cable hook up.

1.   Place the projector on a rigid, non-slip surface.

2.   Lift cover lock levers and raise top cover into open position.

3.   Connect the power cord (Section 2.2).

4.   Connect the audio and video input cables to the projector input terminals (Section 2.2).

5.   For mouse emulation, connect the mouse cable (Section 2.4). PS/2 applications and Apple Macintosh computers require an additional adapter or connecting cable.

6.   Power up the projector then the computer and the video sources (Section 3.1).

7.   Move the projector nearer or further away from the screen to obtain the best image size (Appendix 2).

2.2   Projector Terminal Connections

Take a moment to look over the input terminals on the back of the projector. Terminal connectors for the computer source are: RGB, Mouse, Audio 1/Audio 2. Terminal connectors for the video sources are: Video, S-Video, Audio 1/Audio 2.

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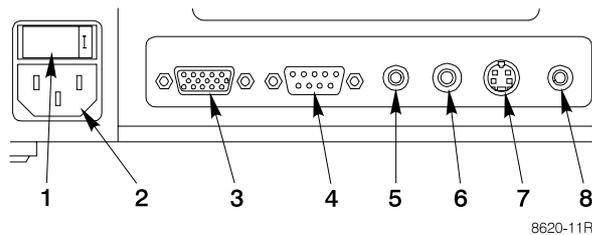
1.   On/Off power switch
2.   Power cord terminal
3.   RGB computer terminal
4.   Mouse terminal
5.   Audio 1 – 3.5 mm stereo mini jack
6.   Video jack
7.   S-VHS jack
8.   Audio 2 – 3.5 mm stereo mini jack

2.3   Control Panel Keypad

The control panel keypad is located on the back of the projector. It has the following buttons:
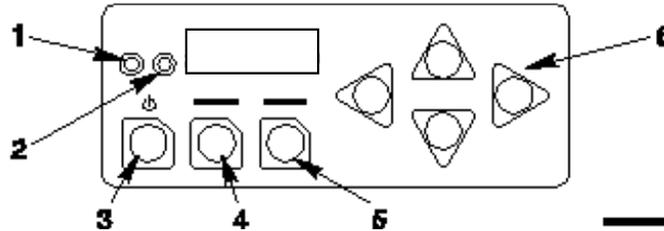
1. Green indicator lamp
2. Red indicator lamp
3. Standby button
4. Menu button
5. Select/Enter button
6. Arrow Keys (up/down, left/right)

2.4   Mouse Connection

The projector has a built-in mouse emulation capability. Use the mouse cable to connect your computer to the projector. Then control your computer mouse functions via the remote control.

1. Switch off computer and projector.

2. Remove mouse cable connection from your computer mouse port.

3. Connect the mouse port of the projector to the mouse port of the computer. For Microsoft serial mouse application use the mouse cable supplied with this projector. *(For PS/2 applications or Apple Macintosh computers an adapter or a connecting cable is required).*

4. First, start up the projector, then start up the computer.

Note: Mouse emulation only works, when all cable connections are established and then the proper start up sequence is followed. See section 3.1.

2.5   Image Size

Adjust the size of the projected image on the screen by moving the projector closer to the screen for a smaller image or further away from the screen for a larger image size. Details in Appendix 2.

3.   Starting Up the Projector

3.1   First steps

After all cable connections have been completed, the projector can
be switched on. For best results, please observe the following start up sequence:

1. Press the power switch (1) to ON to apply power to the projector (I = ON, O = OFF). The red LED (3) will illuminate.

2. Press the Standby button (2). The green LED (3) will illuminate and an image will appear and grow brighter on the screen.

3. Check all lateral ventilation slots and clear away any obstructions.

4. Turn the lens (4) to focus the image.

5. Press the foot lock button (5) to release the height adjustment feet.

6. Raise/lower projector body to extend or retract feet (6) to obtain best image height. Rotate feet (7) for fine adjustment.

7. Power up your computer source and video source(s).

Note: In most cases, the projector will automatically adjust to the graphic mode of your computer by selecting a pre–programmed setting. See Appendix 3.
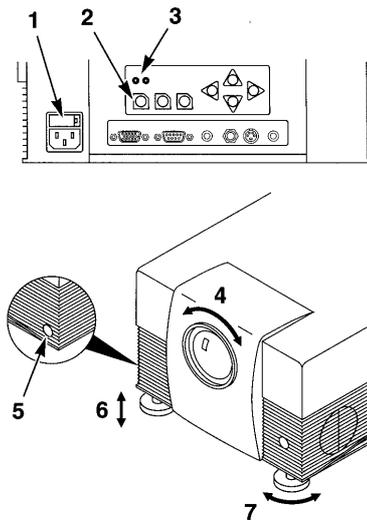
3.2   Standby Mode

When the projector is not being used, place it into standby mode.

1. Press the Standby button.

2. The lamp will switch off and the red LED will illuminate the lamp and project an image on the screen.

Note: In standby mode, the fan motor will continue to run for a few minutes until the projector cools down.

3. Press the standby button again to illuminate the lamp and project an image on the screen.

3.3   Projector Switch Off

Press the standby button to place the projector in the standby mode. The cooling fan motor will continue to run.

1. Wait until the cooling fan motor cycles off then press the main power switch to OFF.

2. Turn off the power to your input devices.

Note: Switching the power off before the fan has cycled off, will decrease the life of the projection lamp.

3. To transport the projector, disconnect the power cord, computer cable, mouse cable and audio/video cables and place into carrying case.

3.4   Projector Power Down

1. Press the Standby button to place the projector in the standby mode. The cooling fan motor will continue to run.

2. Wait until the cooling fan motor cycles off then press the main power switch to Off.
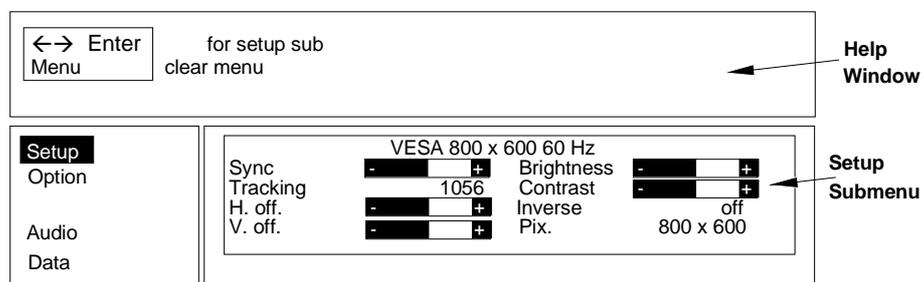
Note: Switching the power off before the fan has cycled off, will decrease the life of the projection lamp.

3. Turn off the power to your input devices.

4. To transport the projector, disconnect the power cord, computer cable, mouse cable and audio/video cables and place into carrying case.

3.5   Using System Menus

You can use the control panel buttons or the remote control to access menus, exit menus and set menu options. At the top of each menu is a *help window* which displays messages that pertain to the menu item that is highlighted.

Press the up/down or left/right ARROW KEYS on the control panel or move the DISKPAD CONTROL on the remote to navigate through the *submenus* and select menu items.

```
 ←→  Enter        for setup sub                                         Help
 Menu            clear menu                                             Window


  Setup              VESA 800 x 600 60 Hz                               Setup
  Option        Sync        -       +    Brightness    -        +       Submenu
                Tracking          1056   Contrast      -        +
                H. off.     -       +    Inverse              off
  Audio         V. off.     -       +    Pix.        800 x 600
  Data
```

1. Press the MENU button to display the main menu.

2. Press the up/down ARROW KEYS or move the DISKPAD up/down to choose a sub-menu.

3. Press the SELECT/ENTER button to select the sub–menu.

4. Press the up/down ARROW KEYS or move diskpad to select a menu item in the sub-menu.

5. Press the left/right ARROW KEYS or move the diskpad left/right to change the value of a menu item.

6. Press the SELECT/ENTER button, if required, to confirm the change to the menu item.

Note: When the background of the displayed item turns red, you must press the SELECT/ENTER button to confirm the change.

7. Press the MENU button to exit the sub-menu and return to the main menu.

8. In some cases, a message will display in the help window asking you to confirm the changes made in the sub-menu. Press SELECT/ENTER to confirm.

9. Press the MENU button to exit the main menu display and return to the projected image.

3.6   Menu Adjustments/Settings

Depending on the current video source selection, the menu items for either the Video Menu or the Data Menu will display. The table below lists all the menu items that can be adjusted.

An asterisk (*) indicates the item appears on the Data menu only, two asterisks (**) indicate the item appears on the Video/S-VHS menu only and no marking ( ) indicates the item is common to both menus.

Submenu Setup*/Image**

Menu Item	Explanation of Adjustment/Setting
<Mode>*	Selection of graphic mode (e.g. VGA 640 x 480, VESA 800 x 600 72 Hz, etc.). Five user modes. See appendix 3.
Brightness	Image brightness.
Contrast	Image contrast.
V. off* (vertical offset)	Adjusts the vertical position of the image.
H. off* (horizontal offset)	Adjusts the horizontal position of the image.
Colour**	Colour saturation.
Inverse*	B/W inverse of image.
Sync*	*Manual* synchronization (phase) or *automatic* adjustment using Select/Enter.
Tracking*	*Manual* screen width (total pixel number/line) or *automatic* adjustment using Select/Enter.
Pixel*	Image format: For unscaled image use the standard resolution.

Submenu Option

Projection	Change image direction for back projection application. *(Default=normal)*

Lamp Mode	Change lamp power: standard (=std.) or eco. (= low) *(Default = eco.)*
Remote Contr.	Turn remote control feature On/Off. *(Default=On)*
Auto Mode*	Turn automatic mode detection On/Off. *(Default=On)*
De-interlacing**	On = Standard video input (VCR). Off = Motion video input (camera).
Language	Select menu display language.
Help	Turn menu help text messages On/Off. *(Default = On)*
Std.**	Select video mode *(Default = Auto)*
SoG*	Sync-On-Green level. Only for Sync-On-Green mode.
<Sync Mode>*	Change synchronization mode (separate, composite, SoG).
Hue**	Colour level for NTSC video.
NTSC**	Default setting of NTSC image (full screen or centered)
St.by-Timer*	Select standby delay: **from 15m**, **30m**, **45m** and **60m.** If the timer is switched off, the projector switches to the standby mode immediately when the **Standby** button is pressed (lamp off). The Standby mode is delayed in all other settings. The lamp remains lit for this time period, the display is darkened and the projection area is turned black.

Submenu Function

Freeze	Freeze an image *(Default = off)*.
Reset*	Restores video modes to factory default settings.
Lamp	Lamp life indicator. Green bar - lamp is good. Red bar - lamp needs replacement

Submenu Sound

Volume	Volume level.
Treble	Treble setting.
Bass	Bass setting.
Balance	Left/right balance of speakers.
Sound	Speakers On/Off. *(Default = On)*
Stereo	Stereo sound On/Off. *(Default = On)*
<Audio assign-ment>	Select audio-in channels (Audio-1/Audio-2) according to data/video selection. Audio-In 1: Data S-VHS S-VHS

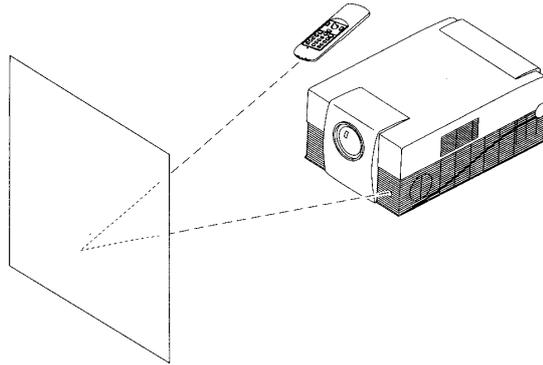|	Audio-In 2: Video Data Video

Submenu <Video Mode>

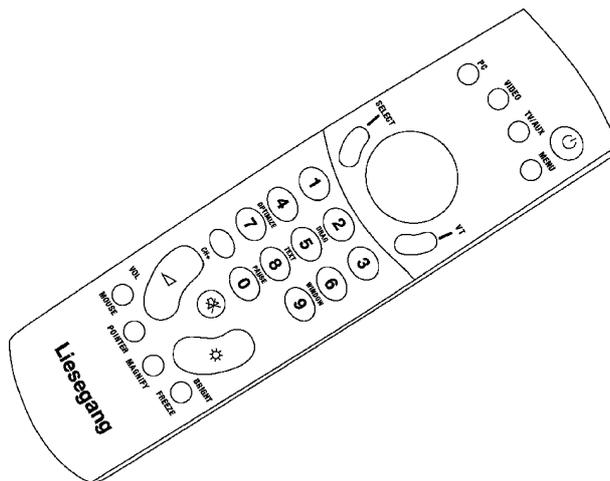| Arrow keys left/right or diskpad	Select video source: Data, Video or S-VHS

4.   Remote Control

4.1   How to Operate the Remote Control

The remote control keypad controls basic projector functions. To use the remote control, aim the remote toward the projection screen and press the desired button. The remote signal will bounce off of the projection screen and back to the sensor on the front of the projector.

## 4.2   Remote Control Button Functions

Button	Description
(⏻)	Press to switch the projector between Standby mode and operation mode.
FREEZE	Stores (freezes) the projected image. Press FREEZE again to return the projection of the current image.
MAGNIFY	Press MAGNIFY to double the image size in horizontal and vertical direction. The details of the middle of the picture can be seen. Move the diskpad to displace the magnified area within the image. Press the MAGNIFY key again to switch back to normal presentation.
POINTER	Places a pointing device on the screen. Move pointer by operating the diskpad.
OPTIMIZE	Optimizes the level setting so that light areas of the image are projected with optimal intensity.
BRIGHT	Brightness adjustment.
VIDEO	Switches to video mode. When in video mode the video source can be selected (Video or S-Video) by pressing the key repeatedly.
⊿	Mute.
PC	Switches to PC mode.
VOL	Volume adjustment.
MENU	Start the On Screen Menu System for projector adjustment.
MOUSE	Activates the mouse emulation. The mouse pointer can be moved using Diskpad. Pressing the button again switches off the mouse emulation.
VT	Right mouse button, if mouse function is active.
DRAG	The left mouse button is held down. Under Microsoft-Windows, for example, objects can be selected and moved. Pressing the drag button again releases the mouse button.
SELECT	Opens a sub-menu or toggles when the menu system is active. Left mouse button, if mouse function is active
WINDOW	No function.
TEXT	No function.
CH+	No function.
TV/AUX	No function.
1..2..3..	No function.

PAUSE	Clears screen image (switches to a blank image).
DISKPAD	*Mouse emulation ON*, diskpad controls the movement of the mouse. *Emulation OFF*, diskpad centers image on screen. *Pointer ON*, controls movement of pointer

4.3   Replacing the Batteries

1. The remote control uses two AAA batteries. The battery cover is located on the back of the remote control .

2. Press the locking tab **(1)** to release the battery compartment door.

3. Lift up on the door **(2)** to remove it and set it to the side.

4. Remove old batteries.

5. Install new batteries **(3)** with the correct polarity (+/-).

6. Replace battery compartment door.
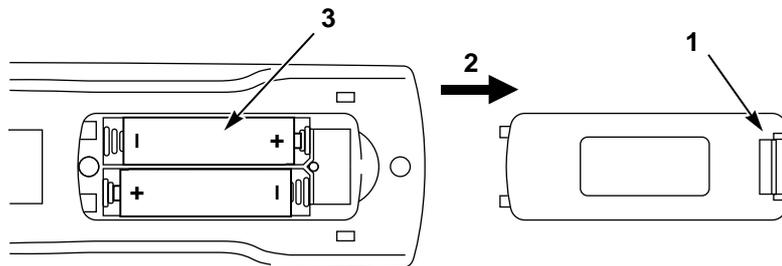
5.   Lamp Information

5.1   Metal Halide Projection Lamp

The metal halide lamp of the projector has a limited life time. If the projected image appears dark or a *red* lamp life indicator bar displays during projector startup, you must change the lamp.

5.2   Lamp Life Indicator

The elapsed operating time of the lamp can be checked in the **Function** menu. As long as the bar of the menu item **Lamp** is green, the lamp is good. When the bar changes to red, the lamp has to be changed.

After changing the projection lamp, the lamp life indicator must be reset to zero.

To reset the lamp life indicator:

1. Select the menu item **Lamp** in the **Function** menu and press **SELECT/ENTER**.

2. Follow the instructions in the help window

3. Press **SELECT/ENTER** and the ↑ arrow of the projector control panel for confirmation.


5.3   Replacing the Lamp

Caution: Always unplug the projector when changing the lamp. There are high voltage parts inside the cabinet that may cause electric shock.

Caution: Allow the projector to cool down. Lamp and adjacent metal parts become extremely hot and can cause burns to your fingers.

1. Press the Standby button ⏻ on the projector control panel or remote control and wait for the fan motor to cycle off.

2. Turn off the power switch and unplug the projector power cord.

3. Stand the projector upright on the left side with the bottom facing you.

4. Locate the lamp access door **(1)** on the bottom of the projector.

5. Remove the two screws **(2)**.

6. Push down on the lock tab **(3)** to release the door.

7. Slide the door open **(4)** and remove it.
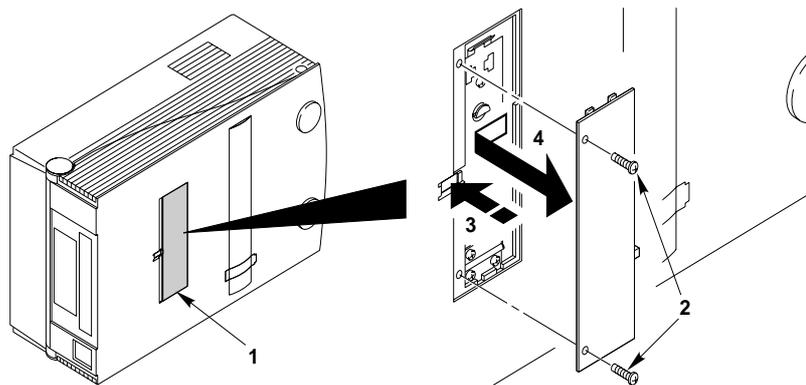
8. Press the tab **(5)** to release the lamp assembly

9. Carefully lower the lamp assembly **(6)** to access the metal halide lamp.

10. The lamp is double ended with sockets on both sides. Carefully pull upward on both ends of the lamp **(7)** to remove it.

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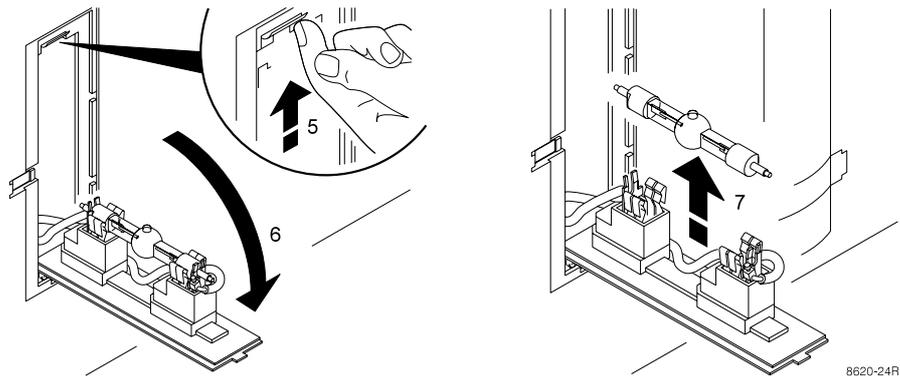
11. Install the new lamp by pushing down on the ends of the lamp **(8)** with equal pressure. Take care to correctly align the lamp with the bubble **(8a)** facing upward.

Important Note: Do not touch lamp glass with fingers. Hold lamp by the metal ends only.

12. Fold the lamp housing **(6)** into the closed position until the lock tab **(5)** secures it.

13. Insert the lamp access door **(1)** and slide it closed to engage the lock tab **(3)**.

14. Insert the two screws **(2)**.

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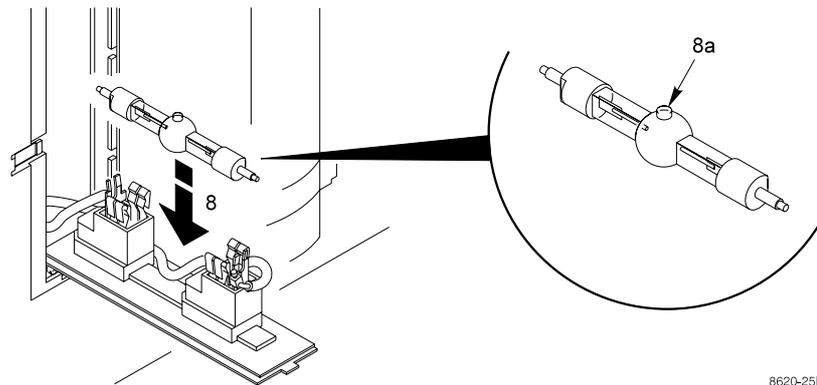
14. Replace the air filter (included in the lamp kit). See Section 6.1.

Important Note: Always change the air filter when the lamp is replaced. When you order a metal halide lamp, it comes in a kit which includes an air filter.

6.   Maintenance

6.1   Replacing the Air Filter

It is recommended to clean the dust filter after every 150 hrs of operation. For best performance, replace the air filter each time the projection lamp is changed.

1. Unplug the power cord of the projector.

2. Stand the projector upright on the left side with the bottom facing you.

3. Locate the air filter door **(1)** on the bottom of the projector.

4. Push the lock tab **(2)** to release the door.
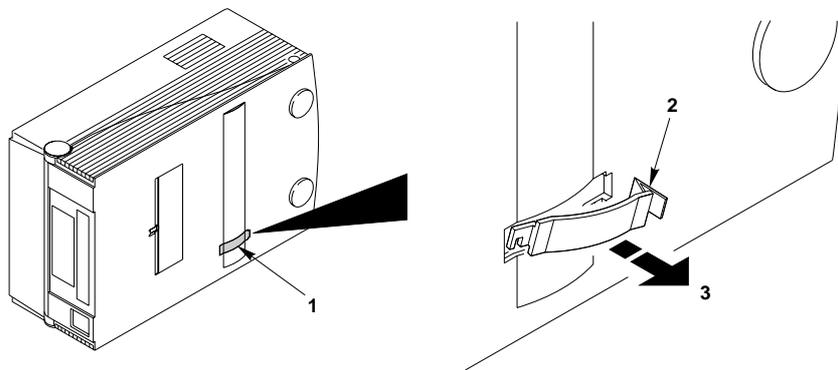
5. The air filter door has a plastic hook **(4)** on one end. Use this hook to reach inside the projector and hook the corresponding tab on the air filter frame.

6. Remove the air filter **(5)** by pulling straight outward.

7. Insert the new air filter by sliding it into position.

8. Insert the air filter door and press the lock tab to secure it in place.
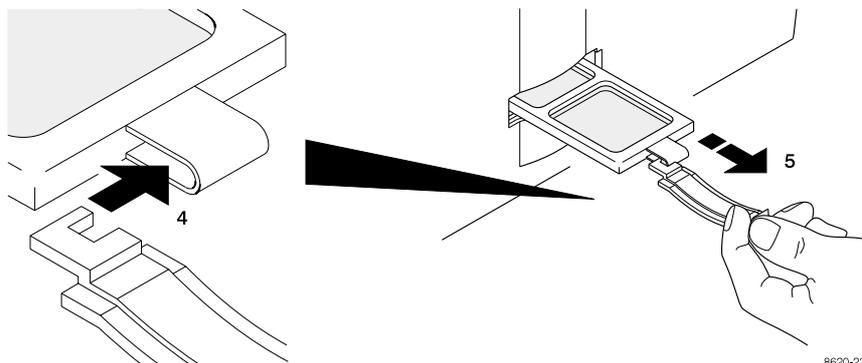
6.2   Cleaning the Projector

For best performance, keep your projector free of excess dust and surface dirt.

Use a soft cloth to remove dust from the projector housing. Use a soft cleaner to remove surface dirt and smudges from the projection lens.

Caution: Always unplug the projector when cleaning. Take care that no liquids get inside the projector. There are high voltage parts inside the cabinet that may **cause electric shock**.

7.   Troubleshooting List

The projector has been designed to be as simple and as trouble-free to use as possible. If you run into problems when using the projector, consult the following list.

General measures:

- Check if all cables are correctly connected.
- Check if power cable is safely and properly connected.
- Perform a system reset:

    1. Switch OFF the projector completely using the Power switch.
    2. Hold down Select/Enter and arrow down key (Approx. 1 min) while switching ON the unit back.
    3. The message „Parameter factory settings restored" is displayed in opening screen.

Problem	Probable Cause	Possible Solution
Projector cannot be switched on.	Lamp house cover is unlocked	Insert lamp house cover carefully and lock it.
Image is disturbed or unstable.	Wrong Sync setting. Wrong Tracking value.	Set to factory default setting. Change Sync setting in the Setup menu for optimum performance. For vertical interference stripes, change the Tracking in the Setup menu for optimum performance.
No computer image projected. Message No sync detected is shown.	Loose cable. No power to computer. Wrong synchronization mode.	Check and secure cable connections. Turn on computer. Adjust synchronization mode of the projector to the synchronization mode of the computer via Option menu.
No video image projected.	Loose cable. No signal from video source.	Check and secure cable connections. Check video picture on TV.
Mouse does not work.	Loose cable. Wrong connection. Wrong power up sequence.	Check and secure cable connections. For PS/2 and ADB (Apple) mouse a special adapter is necessary. Only use adapters from the original manufacturer. The mouse emulation operates correctly only if the correct power up sequence has been used.
Image off-center.	Image position.	Center image with the arrow keys of the control panel or the diskpad of the remote control.

Cannot get entire image on the screen.	Wrong Tracking value. Compatibility problem. Wrong Pixel setting.	If vertical interference stripes occur, change the Tracking value in the Setup menu for optimum performance. Refer to the documentation of your graphic card. The projector supports the resolutions that can be found under Pixel in the Setup menu . Adjust the Pixel setting in the Setup menu to the resolution of the video mode output from the computer graphic card.
Washed out image.	Wrong Contrast setting. Wrong Brightness setting.	Change Contrast setting in the Setup menu. The bar should be in the middle position. Lower Brightness setting in the Setup menu. An automatic adjustment can be performed by choosing Brightness and pressing Select/Enter.
Humming noise. Slowly passing horizontal bars.	Signal sources are connected to different power sources. VCR connected to aerial system and to projector. Bad signal.	Locate the source of disturbance. Disconnect the sources one after another from the projector. Connect all sources to a common power source. Remove antenna connection from VCR. If the disturbance disappears, use a by-pass filter (isolating transformer) to connect the antenna to the VCR. Try different input source.
No power Power shuts off during presentation	Power switch off Projector overheated	Turn on power switch to projector. Remove any objects blocking ventilation and allow projector to cool down. Power will return and projector will be in Standby mode.

Appendix

1.   Technical Specification

Power supply:	100-130 V /200-240 V ~ , 50-60 Hz		

Connections:

RGB-Data input :	15 pin HD	
Serial interface/mouse:	9 pin. Sub	
(separate user manual available)		
Video:		Coax (Cinch)
SVHS:	S-Video	
Audio In (Stereo):	2x mini plug	

Only use the factory supplied cable!

Operating temperature:	35°C max. ambient temperature
Storage temperature:	20°C to +60°C

Dimensions and weight:	ready to project: approx. 280 mm width x 178 mm height x 440 mm depth, approx. 5.9 kg

Infrared remote control:	Power supply with 2 batteries Type IEC LR03 (Size AAA)

Characteristics of the projector:

❍   TFT LCD with large scope of contrast of typically 1:200.

❍   Resolution 800 x 600 pixels.

❍   400 W metal halide lamp with an typical working life of 1,500 hours

❍   Approx. 500 lm luminous flux.

❍   Max. pixel data rate 80 MHz.

❍   The following screen standards can be represented. Screen modes with smaller/higher resolution than the LC display are scaled to the size of the display. The scalings are listed in brackets:

VGA text	720x400 pixel	(800x600)
VGA graphics	640x350 pixel	(800x600)
VGA graphics	640x400 pixel	(800x600)
VGA graphics	640x480 pixel	(800x600)
SVGA graphics	800x600 pixel	(800x600)
XGA	1024x768 pixel	(800x600)
Macintosh	640x480 pixel	(800x600)

Apple Macintosh necessitates a separate connection set.

❍   Parameters can be freely adjusted by the user, for connecting the projector to computers which deviate from the pre-programmed standards.

❍   Automatic setting of tracking and synchronization.

❍   Automatic adaptation of brightness and contrast with OPTIMIZE.

❍   Current settings are saved and also remain saved after switching off the projector.

❍   Menu-guided parameter setting with help text in several languages.

❍   Freeze function for momentarily saving the displayed image.

❍   Digital multi-standard video decoder. Connection for two video sources (one with S-VHS input). Supported video standards:

PAL	625 lines, 50 Hz,
SECAM	625 lines, 50 Hz
NTSC	525 lines, 60 Hz

❍   Two integrated 10 W stereo speakers.

❍   Infrared remote control can be switched off via the options menu when interference occurs due to other infrared devices.

❍   Interface for Kensington™ lock. These locks are a safeguard against theft. They are available from specialised dealers.

2.   Projector-to-Screen Distance

The following table shows the image size relative to the distance of the projector from the screen. This distance is measured from the front of the projector lens to the screen.

DISTANCE TO SCREEN (cm)	IMAGE SIZE (cm)		
	Diagonal	Width	Height
125 cm	126 cm	100 cm	76 cm
150 cm	150 cm	119 cm	90 cm
175 cm	175 cm	139 cm	105 cm
200 cm	205 cm	164 cm	123 cm
225 cm	229 cm	183 cm	137 cm
250 cm	263 cm	210 cm	158 cm
275 cm	290 cm	232 cm	174 cm
300 cm	321 cm	257 cm	193 cm
325 cm	340 cm	272 cm	204 cm
350 cm	375 cm	300 cm	225 cm
375 cm	400 cm	320 cm	240 cm

3.   Detailed Setup Information

## 3.1   Setting Representation, Resolution, Colours

Most computers do not just support one single screen mode but rather a series of different modes which differ in type of representation (text or full graphic), resolution (number of pixels) and number of colours.

Pre-stored standard mode settings for a variety of IBM compatible and Apple Macintosh computers help the projector to recognize the current mode and adjust for optimum performance automatically.

Apart from this you can enter and save additional modes with any parameters by means of the menu system. An upper limit is given by the maximum admissible pixel rate (Appendix 1.).

Adjust the projector to optimum display quality, as described below, by using the menu control (see section 3.5). All steps described can be carried out via the keyboard or the remote control:

1. Adjust the background as necessary to obtain a display with the highest possible contrast. For use under Microsoft Windows it is recommended that you close all applications first, and by using the system control, adjust the desktop background to an even black-and-white raster.

2. Call up the main menu of the projector by pressing the **MENU** key.

3. Select the **Setup** menu.

4. Open the **Setup** menu by pressing the **SELECT/ENTER** key. The current mode is displayed in the title block of the **Setup** menu. Change the mode field if desired. Confirm your selection by pressing the **SELECT/ENTER** key

5. If desired, select an image format with a converted coding of pixel and line numbers to adapt to the current screen mode. Therefore move to the menu item **Pixel** and select the image resolution. Use **800x600** for unscaled representation.

6. Select the menu item **Brightness** and correct the setting so that white areas are projected with optimum intensity. Press the **SELECT/ENTER** key for automatic adjustment.

7. Look at a finely structured area with grid lines. This area may have vertical interference lines superimposed on it.
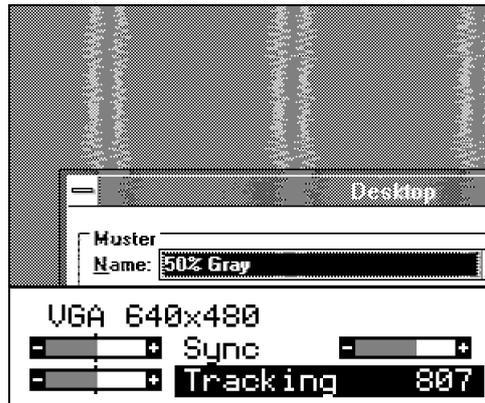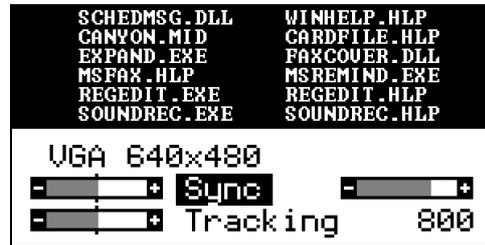

Select the menu item **Tracking** (image width) and adjust for minimum interference. The direction of adjustment is correct when the number of lines decreases. The setting is optimal when no more interference lines can be seen. An automatic setting of tracking and synchronization can be called up by operating the **SELECT/ENTER** key. This may not work, if a uniform pattern is displayed on the projector.

8. Synchronize the phase position of the pixel frequency and scanning frequency. Choose the menu item **Sync**. Contour flicker can be observed with some settings as shown in the following figure:
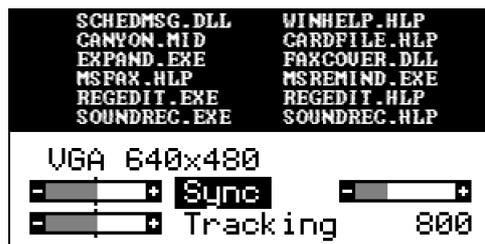
9. In a range of several settings an image is projected that is free of contour flicker. If the sync-setting is correct, the image will improve as shown in following figure:

```
SCHEDMSG.DLL     WINHELP.HLP
CANYON.MID       CARDFILE.HLP
EXPAND.EXE       FAXCOVER.DLL
MSFAX.HLP        MSREMIND.EXE
REGEDIT.EXE      REGEDIT.HLP
SOUNDREC.EXE     SOUNDREC.HLP
```

```
VGA 640x480
-■■■■□■■+  Sync   -■■■■□+
-■■■□■■+   Tracking     800
```

10. An automatic setting of the synchronization can be called up by using the **SELECT/ENTER** key.

11. Minor interference, where one colour meets another, can be corrected by manually adjusting the **Brightness** and **Contrast**. Normally, the contrast should be set to approximately the medium value. Lower values cause an increase in background intensity.

12. To leave the Setup menu, press the **MENU** key.

13. If parameter settings have been changed, a warning is displayed. Confirm the changed settings by using the **SELECT/ENTER** key.

14. Center the projected image, if necessary, with the cursor keys or the diskpad of the remote control.

4.   Tips for Data Projection

With the projector it is now possible to present graphics, computer images, CAD data and other image contents, which use colour to make up the image, to a large audience

without problems and with little effort. It is easy to forget that the impression of the image which an individual gets near to the video monitor is different to that which an observer gets some meters away from the projection screen.

To conclude with here are some tips on how to give a successful computer data presentation:

❍ Adjust the projector for your computer and save the settings for all screen modes.
❍ Try out your presentation beforehand in peace and quiet. Look at the projection from where the audience are seated.
❍ Pay attention to good legibility by selecting suitable font sizes and colours.
❍ Try the effect of the Inverse representation. Change the setting of **brightness** both manually and with the **OPTIMIZE** button. Familiarize yourself with the controls in order to achieve the best possible effect for your presentation.
❍ Pay attention to optimal room lighting: sunlight or light from lamps should not fall directly on the projection screen. The room should be lit so that it is comfortable but not too bright.
❍ Use a projection screen with a high degree of reflection.

5.   Service Hotline

In case of technical problems please feel free to call Liesegang at +49 211 39 01 444.

For information about Liesegang products and if you have problems with operation of Liesegang products please do not hesitate to call Liesegang at +49 211 39 01 245.

Fax Hotline +49 211 39 01 226

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CE

This equipment complies with the requirements of the EU guidelines 89/336/EWG for electromagnetic compatibility and therefore bears the CE sign. The equipment satisfies the following standards:

EN 55022   Interference voltage and perturbing radiation

EN 50082-1   Immunity to interference

EN 61000-4-2   Electrostatic discharge

EN 61000-4-3   HF irradiation

EN 61000-4-4   Burst test

Warning!
This is a class A apparatus. This apparatus can cause radio interference in residential quarters; in such circumstances the user may be asked to take appropriate steps and be responsible for these.

Note
The European standards EN 55022 and EN 50082 differentiate between equipment of class B (for use in living areas) and equipment of class A. Residential quarters are defined as those areas where a radio or television receiver is operated within a radius of 10 m. Equipment of class A may produce a higher level of interference voltage but must itself also be less sensitive to interference caused by other devices than equipment of class B. This equipment fulfills the requirements of class A. If radio or television receivers are used in the immediate vicinity of this equipment then usually interference is not to be expected as long as these receivers are connected to a properly installed aerial system.