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Renfert

making work easy

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EASY view 3D

TRANSLATION OF THE ORIGINAL INSTRUCTIONS FOR USE

21-6867 29112019

Made in Germany

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1 Introduction

1.1 Symbols used

This manual contains symbols also found on the appliance itself with the following meaning:

Danger
Immediate risk of injury. Consult accompanying documents!

Electrical current
This indicates a risk of injury due to electrical current.

Caution
Risk of damage to the unit if the instruction is not followed.

Notice
A general notice that improves and eases use.

The appliance complies with applicable EU directives.

Within the EU, this device is subject to the provisions of the directive 2002/96/EC (WEEE directive).

► **List, special attention**
• List
- List
⇒ Instruction / required action / entry / order of tasks:
You are prompted to perform the specified action in the given order.
♦ Result of an action / reaction of the device / reaction of the program:
The device or program responds to your action, or because a particular event occurred.

Other symbols are explained when displayed.

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2 Safety

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2.1 Correct use of the unit

The system is used for digital stereo-magnification in 2D and 3D in real-time and for documentation.

2.2 Unapproved Use

Only spare parts and accessories supplied or authorized by Renfert GmbH may be used with this product. If other spare parts or accessories are used, this could have a detrimental effect on the safety of the device, increase the risk of serious injury and lead to damage to the environment or the device itself.

2.3 Ambient conditions for safe operation

The appliance should only be operated:

- indoors,
- up to 2,000 meters above sea level,
- at an ambient temperature of 5 - 35 °C [41 - 95 °F] *),
- at a maximum relative humidity of 80 % at 31 °C [87.8 °F], linear reduction up to 50 % relative humidity at 35 °C [95 °F] *),
- with mains electricity supply provided that the voltage fluctuation is within 10 % of the rated value,
- with Pollution Degree 2,
- with Overvoltage Category II.

*) The unit can be used at a temperature of 5 - 30 °C [41 - 86 °F] and at a humidity of up to 80 %. At temperatures of 31 - 35 °C [87.8 - 95 °F] the humidity must reduce proportionately to ensure that the unit can be operated (e.g. at 33 °C [91,4 °F] = 65 % humidity, at 35 °C [95 °F] = 50 % humidity). The unit should not be operated at temperatures above 35 °C [95 °F].

2.4 Ambient conditions for storage and transport

For storage and transport, the following ambient conditions must be maintained:

- ambient temperature of -20 – +60 °C [-4 – +140 °F],
- maximum relative humidity 80 %.

2.5 Hazards and Warnings



2.5.1 General information

- ► **Granted protection is not given any longer in case the unit is not operated according to the instruction manual on hand.**
- ► **The unit should only be operated using a mains cable with a country-specific plug system. Any modification required should only be carried out by an electrician.**
- ► **The unit should only be operated if the data on the rating plate corresponds with the data of regional mains voltage.**
- ► **The unit should only be plugged into earthed sockets.**
- ► **The mains socket should be easily accessible.**
- ► **Disconnect the unit from the mains before working on electrical parts.**
- ► **Regularly check connecting cables (such as power cables), hoses and housing (for example, the control panel) for damage (for example, kinks, tears, porosity) or deterioration due to aging. Do not operate units with damaged connection cables, hoses or housing parts or other defects!**
- ► **Damaged equipment must be taken out of service immediately. Disconnect from mains and secure against being switched on again. Send the device in for repair!**
- ► **Operate the equipment only under supervision.**
- ► **Observe national accident prevention regulations!**
- ► **It is the responsibility of the operator that national regulations during operation and regarding a repeated safety inspection of electrical equipment are complied with. For Germany these are the regulation 3 by DGUV (German Statutory Accident Insurance) in relation with VDE 0701-0702 (Association for Electrical, Electronic and Information Technology).**
- ► **Information on REACH and SVHC is available on our website www.renfert.com, in the Support area.**

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2.5.2 Specific information

- **Do not look into the lighting.**
- **As with all optical magnification systems, working with the system for long periods can lead to symptoms of fatigue. Take breaks regularly.**
- **The 3D glasses do not replace protective eye equipment in any way.**



Further safety instructions for the monitor can be found in chapter 6.

2.6 Approved personnel

The appliance may only be operated and serviced by trained personnel.

Repairs that are not specified in these operating instructions should only be carried out by an electrician.

2.7 Liability Exclusion

Renfert GmbH is not liable for claims for compensation or claims under guarantee if:

- **the product is used for purposes other than those stated in the operating instructions**
- **the product is modified in any way – apart from modifications described in the operating instructions**
- **the product has not been repaired by a specialist firm or original Renfert replacement parts have not been used**
- **there is continued use of the product despite obvious safety defects or damage**
- **the product has been subjected to mechanical knocks or has been dropped.**

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3 Product description

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3.1 General description

The EASY view 3D system consists of a head with two cameras, lighting and the image processing unit, as well as a 3D-capable monitor including 3D glasses

For easy operation, the head is mounted on an adjustable support arm.

3.2 Assemblies and functional elements

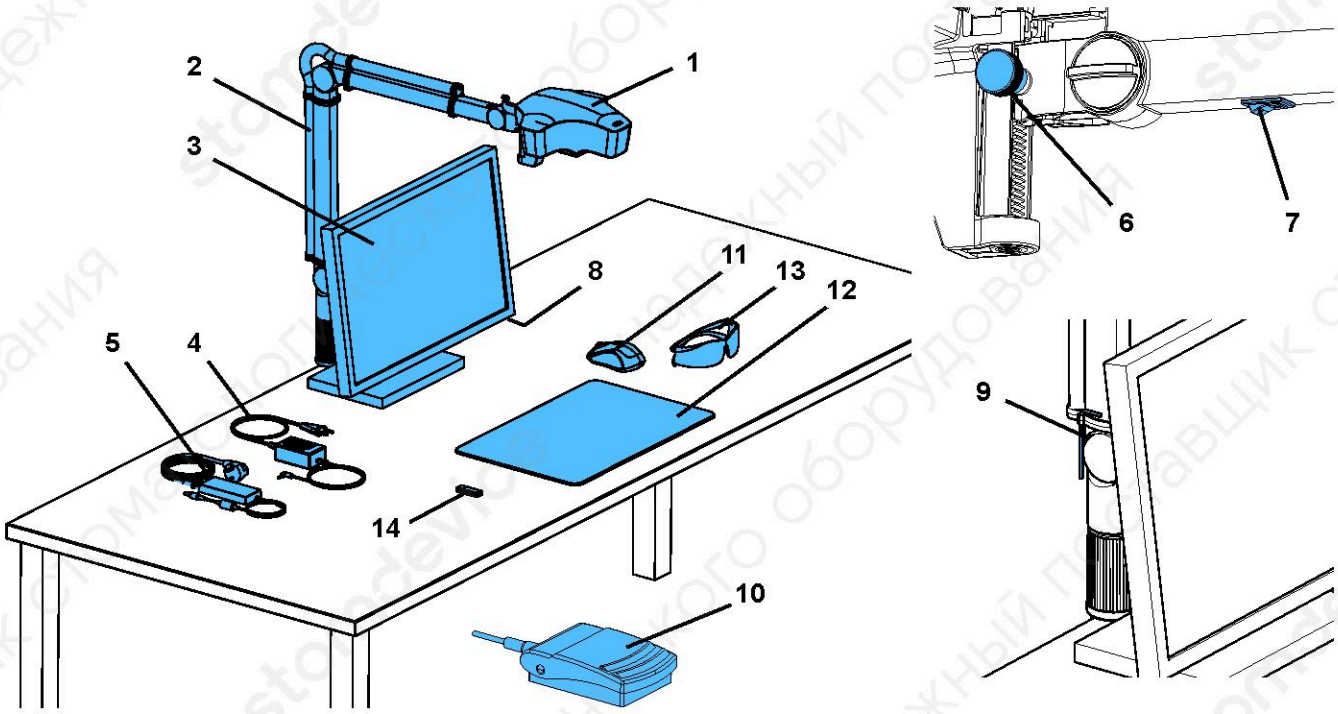


Fig. 1

1 Head
2 Support arm with base
3 Monitor
4 EASY view 3D power supply
5 Monitor power supply
6 Height adjustment (focus)
7 EASY view 3D power switch
8 Monitor power switch
9 Tool for clamping force adjustment (Allen key)
10 Foot switch
11 Mouse
12 Desk pad
13 3D glasses
14 USB memory stick

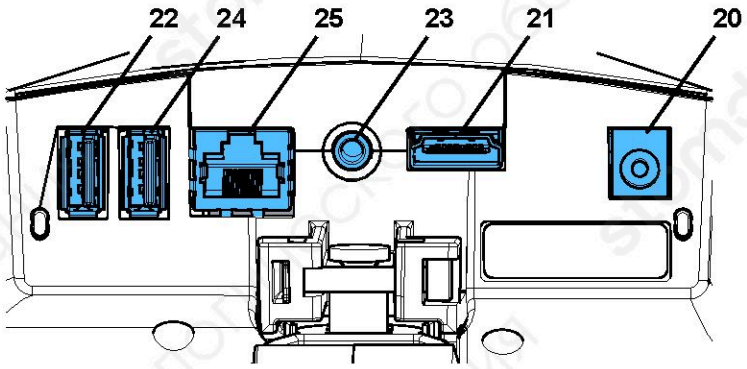


Fig. 2

Connections

20 Power supply
21 HDMI output
22 USB port for USB memory stick
23 Foot switch
24 USB port for mouse
25 Network

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3.3 Standard Delivery

1 EASY view 3D head with power supply unit and power cord
1 Support arm with cable and base with universal clamp
1 Monitor with power supply unit and power cord
1 3D glasses
1 USB memory stick
1 Mouse
1 Foot switch
1 Desk pad
1 Quick Start Guide

3.4 Accessories

2200 0420	Stand with screw clamp
2200 0410	Stand with universal clamp
2400 0501	EASY view 3D Converter 3D/2D
2400 0502	EASY view 3D HDMI-Video-Recorder
2400 0503	EASY view 3D HDMI-Splitter
2400 0504	EASY view 3D HDMI-Video-Recorder with multi voltage power adapter
2400 0505	EASY view 3D HDMI-Splitter with multi voltage power adapter
2400 0506	EASY view 3D Converter 3D/2D with multi voltage power adapter
2400 2101	EASYbooth case large
9000 37809	3D glasses
9000 37901	EASY view 3D Headset HDMI-Recorder (only in use with 2400 0502 / 2400 0504)

4 Commissioning

4.1 Unpacking

⇒ Remove the device and accessories from the shipping box.
⇒ Check the delivery for completeness (compare with the scope of delivery).

4.2 Mounting the monitor stand

⇒ Place a soft pad on a flat surface.
⇒ Place the monitor with the screen on it.
⇒ Remove the protective film from the stand.
⇒ Attach the supplied stand to the monitor support.

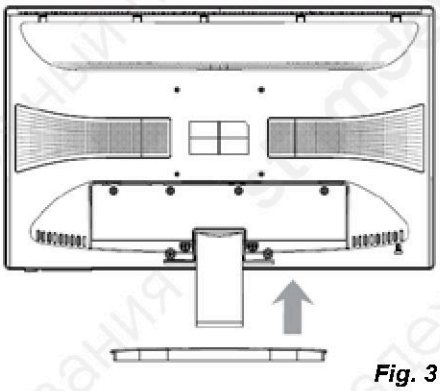


Fig. 3

4.3 Setup

Select a workspace with sufficient lighting for the installation of the EASY view 3D system. If neon lighting is used, it may be necessary to reduce the lighting. Reflections of extraneous light on the object may result in interference.

⇒ Place the desk pad (12, Fig. 1) on the work table.

The surface structure and color of the desk pad have been selected to reduce irritation to the eye, which could occur with a surface with structure.

4.3.1 Mounting the support arm

The support arm should preferably be mounted on the back or side of the table top, at least 400 mm away from the front edge.
This makes it possible to optimally utilize the entire swiveling range of the support arm.

⇒ Mount the base with the universal clamp on the back or side of the work table (Fig. 4).

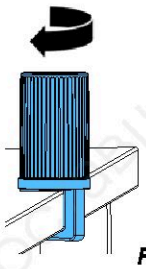


Fig. 4

The universal clamp is suitable for tables with a slab thickness of 18 - 74 mm.

Refer to Chapter 3.4 for more mounting options.

⇒ Insert the support arm (2) into the base. Make sure that the red plastic disc (30) is placed between the base and the support arm.

The power supply cable for the head is integrated into the support arm, the cables for the mouse, foot switch and monitor have already been guided through the cable channel on the back of the support arm.

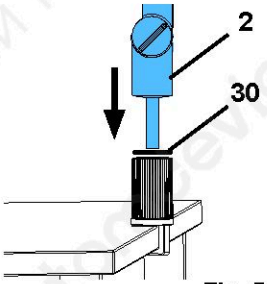


Fig. 5

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⇒ Place the mouse (11, Fig. 1) next to the desk pad..

⇒ Place the foot switch (Fig. 1) under the table and insert the cable for the foot switch into the foot switch

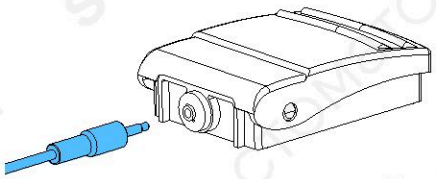


Fig. 6

4.3.2 Mounting the head

Four washers are needed for mounting the head (see Fig. 7).

Three small washers (gold/black/gold) have already been threaded onto the fastening screw (31) in the correct sequence. The large washer is attached to the head with an adhesive strip with a red end.

⇒ Remove the adhesive tape with the red end.

⇒ Loosen the fastening screw (31) on the support arm.

⇒ Attach the fastening screw with all three small washers through the adapter of the head.

⇒ Make sure that the three small washers (gold/black/gold) and the large washer are in the correct order as shown in the figure.

⇒ Insert the adapter with the fastening screw and tighten the fastening screw until the head no longer tilts downward.

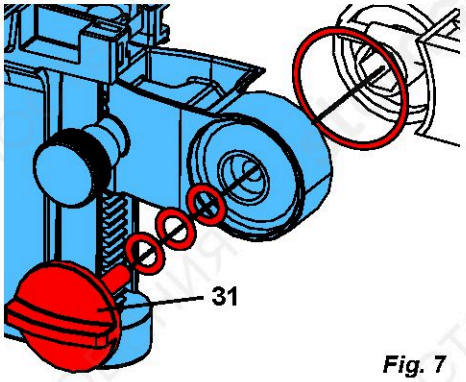


Fig. 7

4.3.3 Positioning the monitor

⇒ Position the monitor so that it is directly in the field of view. The distance to the observer should be between 50 and 70 cm.

⇒ Align the monitor (tilt, rotate using stand) so that the viewing direction is perpendicular to the monitor in all planes (Fig. 8 / 9).

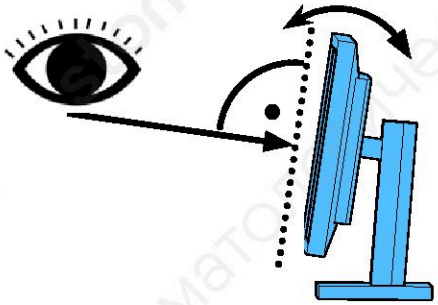


Fig. 8

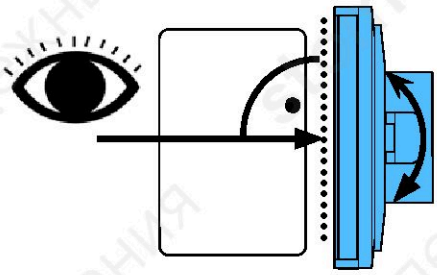


Fig. 9

4.3.4 Adjusting the clamping force

In order to achieve a stable position of the head, the clamping forces of the three joints can be adjusted individually.

- Support arm
  - Fasten the screw at the head (31).
  - Middle clamping screw (32).
  - Clamp screw on base part (33).

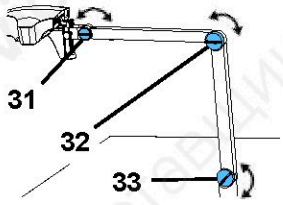


Fig. 10

- Swiveling the head right/left
  - Clamping screw (34) with the included tool (9, Fig. 1).

- Height adjustment
  - Clamping screw (35) with the included tool (9, Fig. 1).

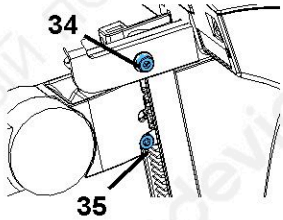


Fig. 11

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4.4 Electrical connection

Several plugs and related connector sockets are defined with a color coding. When connecting the components, make sure that the color coding is correct! Improperly connected components can become damaged by too high voltage!

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4.4.1 Connections on the head

The cables are connected on the back of the head.

⇒ Monitor cable ==> HDMI connection (21).
Plug the HDMI cable (36) into the retaining clip and then plug it straight into the socket.

⇒ Foot switch cable ==> connection (23).

⇒ Mouse cable ==> connection (24).

⇒ USB memory stick ==> connection (22).

⇒ Network extension cable ==> in connection (25).

⇒ Power supply of the head (integrated into the support arm) ==> connection (20).

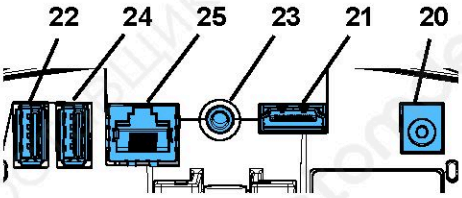


Fig. 12-a

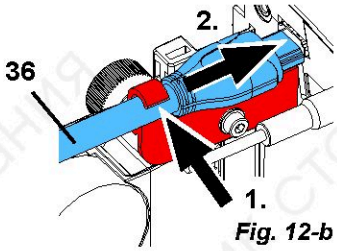


Fig. 12-b

4.4.2 EASY view 3D head power supply

The EASY view 3D power supply (4, Fig. 1) has a cable with an angled jack plug (37).

⇒ Plug the jack into the socket on the cable of the power supply, which protrudes at the base of the support arm.
Ensure that the color coding is correct between the connection cable and socket!

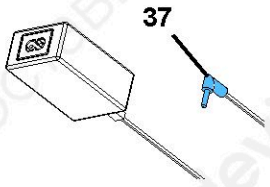


Fig. 13

Never plug the jack plug into the connection for the foot switch (23, Fig. 12-a)! This will destroy the head.

⇒ Insert the power cord into the power supply unit and into the building wall socket.

4.4.3 Connecting the monitor

⇒ Monitor cable ==> DVI input of the monitor (41).

⇒ Secure plug with integrated screws.

⇒ Power supply ==> DC 12 V (40). The monitor power supply (5, Fig. 1) has a cable with a hollow plug.
Ensure that the color coding is correct between the connection cable and socket!

⇒ Insert the power cord into the power supply unit and into the building wall socket.

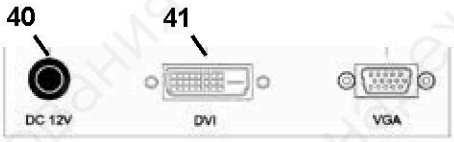


Fig. 14

5 Operation

5.1 Switching on

⇒ Switch on the monitor by pressing the power button (8, Fig.1).

⇒ Switch on the head using the power switch (7, Fig. 1).

- The lighting goes on.
- **After about 20 seconds**, an image appears on the monitor.

The cone of light on the table top describes an area whose center is captured by the optics.

5.1.1 Stand-by

If there is no movement below the head for more than 10 minutes and the mouse has not been moved for more than 10 minutes, the lighting and the monitor output are switched off.
The monitor's power button (8, Fig. 1) flashes in this case.
The stand-by mode is ended when the mouse is moved or movement takes place in the detection range of the optics.

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5.2 Adjusting the monitor

In most cases, the monitor can be used with its basic settings.

5.3 Set up

There are two options for focusing the image:
- Coarse adjustment by moving the head with the support arm.
- Fine adjustment through height adjustment (6, Fig. 1).

The amount of force required for the movement of the support arm, head and height adjustment can be adjusted using the fastening and clamping screws, see Chapter 5.4.

The following procedure is recommended:

⇒ Align the head parallel to the table.

⇒ Place the object on the desk pad within the cone of light.

⇒ Set the head to the middle of the height adjustment.

⇒ Set the head on the support arm so that the object can be seen on the monitor and if necessary adjust the height adjustment.

This allows you to quickly correct the focus for objects with different heights.

5.4 System settings

The current settings of the system are displayed on the monitor at the bottom left.

As soon as the mouse is moved, the monitor displays the available settings and with which element of the mouse the setting can be changed.

<table>
<tr><th colspan="3">System settings</th></tr>
<tr><td>2D/3D representation</td><td>Magnification
(15x, 20x)</td><td>Object mode (ceramic, metal, standard, neutral), see Chapter 5.4.1.</td></tr>
<tr><td>
</td><td>
</td><td>
</td></tr>
<tr><th colspan="3">Changing the system settings</th></tr>
<tr><td>
</td><td>
</td><td>
</td></tr>
<tr><td>⇒ Left mouse button (A)
♦ Switch between 2D and 3D display</td><td>⇒ Mouse wheel (B) rotation forward / backward
♦ Switch of magnification between 15x and 20x
⇒ Press / rotate the mouse wheel (B)
♦ Adjust the brightness of an object mode (see Chapter 5.4.1).</td><td>⇒ Right mouse button (C)
♦ Switch object modes</td></tr>
</table>

In addition, the current IP address and the host name of the EASY view 3D head are displayed (see Chapter 5.5.3).

5.4.1 Object modes – adjusting the brightness of the image

The object modes are customized for different materials of the respective objects:
- S: Standard (for example, when working with dentures, waxes, etc.)
- C: Ceramic
- M: Metal
- Neutral (especially for delicate, detailed areas and transitions in crowns and bridges)

For the object modes S, C, M, image processing is performed internally, improving the image quality with respect to reflections and color reproduction.

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Different parameters are stored for each object mode, including the individual image brightness. This can be changed.

To do so:

⇒ Select the object mode to be modified (see Chapter 5.4).

⇒ Press the mouse wheel (B).

♦ A setting bar appears, where the current image brightness is displayed.

⇒ Turn the mouse wheel to change the brightness.

♦ Darker • • • • Brighter



♦ The "zero position" corresponds to the factory setting.

5.5 Screen shot / still image

Using the foot switch, the monitor image can be frozen (still image) or also stored on the USB memory stick (screen shot).

5.5.1 Still image

⇒ Press the foot switch for more than 1 sec.

♦ The still image is displayed, meaning the monitor image is frozen.

While the still image is displayed, the following actions can be performed:

⇒ Briefly press the foot switch.

♦ The screen contents are saved to the USB stick as a screen shot (see Chapter 5.5.2).

⇒ Press the foot switch for more than 1 sec.

♦ Switch back to the live image.

The following settings can be changed while the still image is displayed:

- Switch between 2D and 3D display.
- Switch of magnification between 15x and 20x.

5.5.2 Saving a screen shot

Screen shot are only saved as 2D images, even if the 3D display was set when the save operation was performed.

⇒ Briefly press the foot switch.

♦ The screen contents are saved to the USB stick as a screen shot.



♦ The screen shot icon appears on the monitor.

♦ The file name is displayed on the monitor during the save operation.

♦ No other actions are possible during the save operation (approx. 5 sec.).

The file name has the following format:

- IMGxxx.bmp
- xxx = sequential counter 000 to 999

If the USB memory stick is then connected to a PC, the file names can be changed as usual, for example, to assign them to a customer.

5.5.3 Accessing the USB stick via a network

If the EASY view 3D head is connected to a local network via the network port (25, Fig. 2) and the network extension cable (already inserted in the cable channel), the images (screen shots) of the USB stick in the head can be accessed over the network.

Access can take place using free FTP transfer programs (for example, FileZilla), or directly via the WINDOWS Explorer or the Apple browser, Safari.

⇒ Plug in the network cable into the cable jack at the end of the network extension cable and connect it to a switch or router. This network cable is not included in the scope of supply.

⇒ Move the mouse and note the IP address and host name.

♦ The IP address and host name are displayed at the bottom of the screen:

IP address: ftp://XXX.XXX.XXX.XX

Host name: ftp://Renfert@EV3D_xxxx (xxxx: 4-digit number, device-specific)

From version 2.001:
see sections 5.7 and 5.7.1. for information on IP address and hostname.

Access via a FTP transfer program

Depending on the FTP transfer program used, you will need to enter the host name and/or the IP address. When asked for a user name, enter "Renfert"; a password is not required and can be ignored.

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Access via WINDOWS Explorer

⇒Open WINDOWS Explorer.

⇒Enter the host name as displayed in the address line.

⇒Press Enter.

- ♦ The content of the USB stick is displayed as folder content.
- ♦ It is NOT possible to view a preview of the images.
- ♦ Images/files can be moved/copied between the PC and USB stick by dragging and dropping.

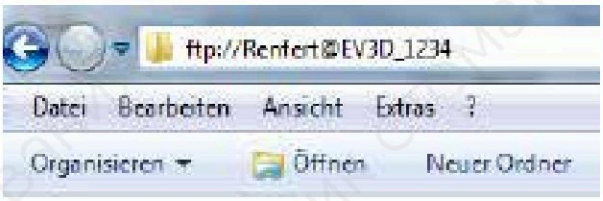


Fig. 15

Access via Safari

⇒Open the Safari browser.

⇒Enter the IP address as displayed in the address line.

⇒Enter "Renfert" as the user name for the authentication prompt; the password field remains blank.

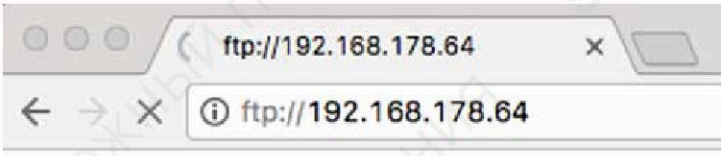


Fig. 16

- ♦ The files of the USB stick are only displayed in tables/text form.
- ♦ It is not possible to move the files.

Depending on the network configuration, the EASY view 3D head is assigned a new IP address after being switched on. If there is no connection, the IP address must be checked.

5.6 Working with 3D

After switching to the 3D display, a 3D image is generated on the monitor.

When working in 3D, the 3D glasses must be worn.

Looking at the 3D image without 3D glasses (for example, over the shoulder of another person) is very strenuous and not recommended.

When working in 3D mode, it is important that the monitor is aligned correctly. The monitor should be perpendicular to the viewing direction. Refer to Chapter 4.3.3.

5.7 Split screen

The System Easy view 3D contains the split screen function from version 2.001. This enables an additional image to be inserted on the monitor. This can be an image from a USB flash drive or a screenshot that has just been taken.

The size and position of the inserted image can be adjusted.

With the split screen function, inserted images are only displayed in 2D.

The current software with Split Screen function can be found in the Download Section of our web site at **www.renfert.com/p915.**

Enter the following item number: 24000500.

Select the download category „Product software“.

- ♦ Open split screen main menu:

⇒press the right mouse button until the split screen main menu appears.

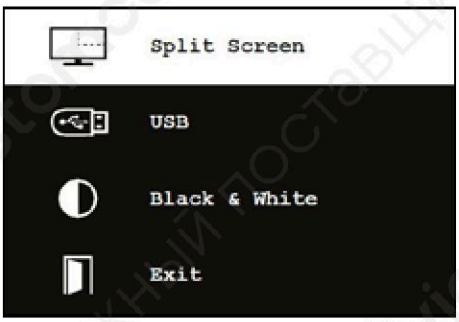


Fig. 17

Operation and navigation in the split screen menus:

⇒Roll mouse wheel

- ♦ Select menu item / sub-menu

⇒Click left mouse button

- ♦ Select menu item / sub-menu

⇒Click right mouse button

- ♦ returns to the previous menu level

⇒Click and hold the right mouse button

- ♦ closes the split screen menu and returns back to normal operation

As long as a split screen menu is open, the system settings (2D / 3D, 15x / 20x zoom, object mode) cannot be changed.

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Exit

In all menus and sub-menus:

♦ closes the split screen menu and returns back to normal operation.

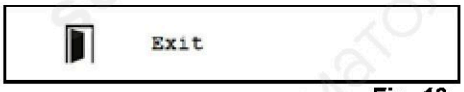


Fig. 18

Split screen - main menu

The following selections are possible in this menu:

- Split screen: Open split screen sub-menu.
- USB: Select an image from a USB flash drive and insert it.
- Black & white: Select which image selection should be displayed in black & white / color.
- Exit: Close the split screen menu.

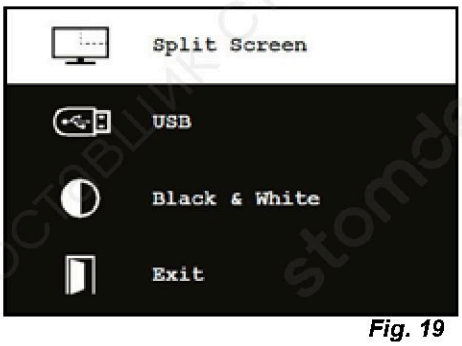


Fig. 19

Sub-menu - split screen

The following selections are possible in this menu:

- Select and insert an image from a USB flash drive.
- Take a screenshot and insert it.
- Settings
  - Position of the inserted image.
  - Size of the inserted image (3 sizes + full screen).
  - System information
- Switch off split screen function, remove inserted image.
- Exit: Closing split screen menu.

The symbol of the currently selected source of the inserted image (USB flash drive or screenshot) is displayed in green.

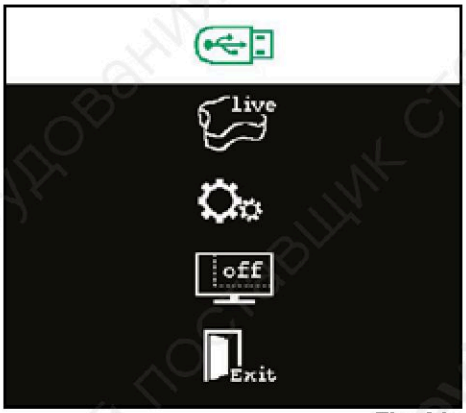


Fig. 20

Inserting an image from a USB flash drive

⇒ Select the USB flash drive in the split screen main menu (Fig. 20) or the split screen sub-menu (Fig. 21).

⇒ Select using the left mouse button.

♦ A list of the files on the USB flash drive is displayed in the menu.

⇒ Use the mouse wheel to select a file.

♦ A preview of the file is displayed in a corner of the screen.

⇒ Select the desired file using the left mouse button.

♦ The file is inserted and fixed in the opposite corner.

♦ The file name of the selected image is displayed in green.

⇒ Select another file using the mouse wheel or close the file list using the right mouse button.

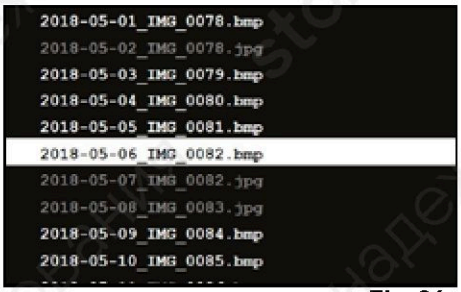


Fig. 21

Inserting screenshot

⇒ Select the screenshot item in the split screen sub-menu (Fig. 21).

⇒ Select using the left mouse button.

♦ An hour glass icon appears on the monitor while the screenshot is being created.

♦ The screenshot taken is inserted into the selected corner of the monitor.



Fig. 22

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Black & white / color sub-menu

The following combinations are possible:
- The main image in black & white, the inserted image in color.
- The main image in color, the inserted image in black & white.
- Both images in black & white.
- Both images in color.
- Exit: Closing split screen menu.

The selected combination is displayed in green.

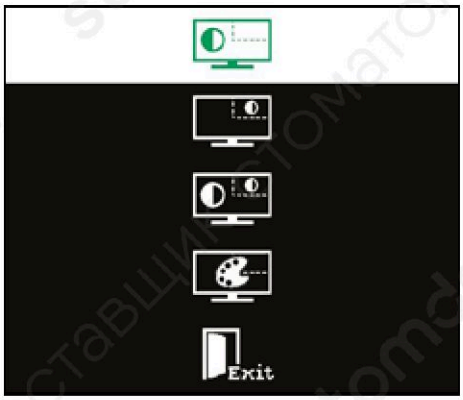


Fig. 23

Sub-menus - settings

The following selections are possible in this menu:
- Insert the image in the right or left corner of the monitor.

If an image is inserted from a USB flash drive, a preview of the selected file appears in the opposite corner of the monitor, see „Inserting image from a USB flash drive“.

- Changing the size of the inserted image (3 sizes + full screen).
- Displaying system information.
- Exit: Closing split screen menu.

Full screen display can also be selected from the image size options. In this case, the 2D or 3D image is no longer visible.

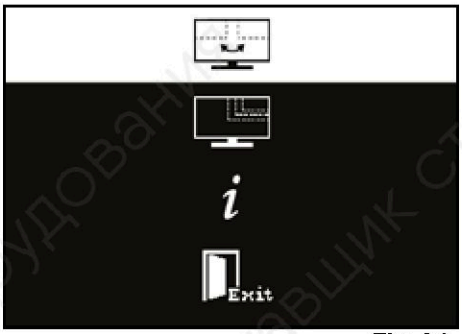


Fig. 24

5.7.1 System information

The system information sub-menu provides information on:
- The system name
- The version of the software included

If the EASY view 3D is connected to a network, the following are additionally displayed:
- IP address
- Hostname

This information is necessary if the EASY view 3D is to be integrated into a network in order to gain access to the images on the USB flash drive via this network.

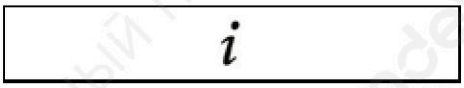


Fig. 25

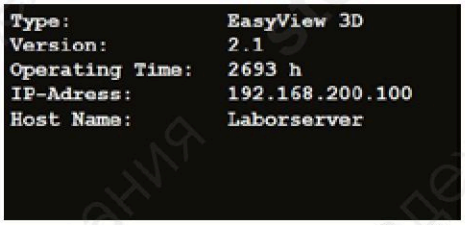


Fig. 26

6 Monitor

Renfert recommends not changing the factory settings of the monitor as the basic settings for the EASY view 3D.

6.1 Safety instructions

Commissioning

- ► **Do not close off the ventilation openings.**
- ► **Place the monitor in a well-ventilated place to avoid overheating.**
- ► **Only use accessories specified by the manufacturer or included with the monitor.**
- ► **Select a location where the monitor will not be exposed to extreme temperatures, high humidity, direct sunlight or dusty environments. Avoid proximity to equipment that generates strong magnetic fields.**

Water and moisture

- ► **Do not operate the monitor near water. To reduce the risk of fire and electric shock, do not expose the monitor to rain or moisture.**

Power cord and power cord connection

- ► **Install the power cord so that it will not be walked on or damaged. Take into account the location of the cables, plugs, sockets and connector on the monitor.**

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Product care

► **Do not touch the screen directly with your fingers. Grease from the skin can also leave fingerprints on the screen, which are difficult to remove and can damage the screen. Do not put any pressure on the screen.**

Cleaning

► **Clean only with a dry cloth.**

Repair

► **Do not repair the monitor yourself. High voltages exposed when the cover is opened or removed. There is a danger of electrical shock. Repairs must be carried out by qualified personnel only.**

Lightning strike

► **For extra safety during a thunderstorm, or when the monitor is left unattended or unused for a long time, unplug the power cord of the power supply and the monitor cable. This prevents damage to the monitor due to lightning strikes and power surges.**

Mains connection

► **Do not remove earth or protective conductor connection from the mains plug of the power supply unit.**

► **Unplug the power supply unit when the monitor is not used for an extended period of time, or if the power cord, power plug, or monitor housing is damaged.**

Caution

► **Do not try to open the product. Any attempt to open the product or remove the cover will void the warranty and may result in serious injury.**

6.2 Connections

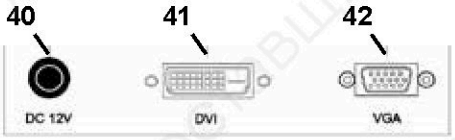


Fig. 27

40 DC 12 V 3.33 A

41 DVI input

42 VGA input

6.3 Operation and settings

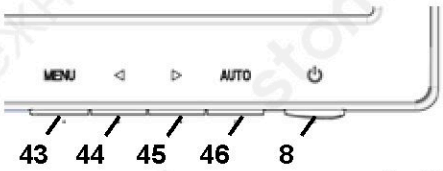


Fig. 28

8 Power switch

43 Menu, opens the monitor menu

44 Signal source selection. Reduce the selected value in the monitor menu

45 Adjust brightness. Increase the selected value in the monitor menu

46 AUTO, automatic horizontal and vertical adjustment of the image. Also to exit the monitor menu

6.4 Monitor Menu

Color

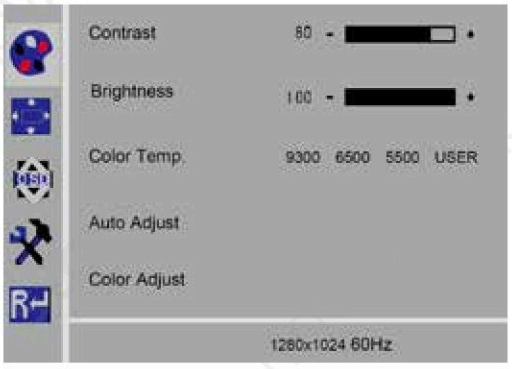


Fig. 29

Contrast
Adjust screen contrast (difference between light and dark regions of the image).

Brightness
Adjust the brightness of the image.

Color Temp.
Select between different, preset color temperatures or set your own custom parameters. (9300/6500/5500/USER).

Auto Adjust (not selectable).

Color Adjust (not selectable).

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Image

The settings under this menu item are fixed and cannot be changed.
The menu item cannot be selected.

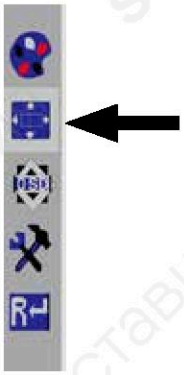


Fig. 30

Monitor menu

Language
Select the language for the monitor menu (English / French / German / Italian / Russian / Spanish / Portuguese / Japanese / Korean / Traditional Chinese / Simplified Chinese).

Horizontal position of the monitor menu (QSD H-Pos.)
Adjust the horizontal position of the monitor menu (left or right).

Vertical position of the monitor menu (QSD V-Pos.)
Adjust the vertical position of the monitor menu (up or down).

Monitor menu time setting (QSD Timer)
Set the time that the monitor menu is displayed (3 - 60 seconds).

Transparency
Adjust the transparency of the monitor menus.

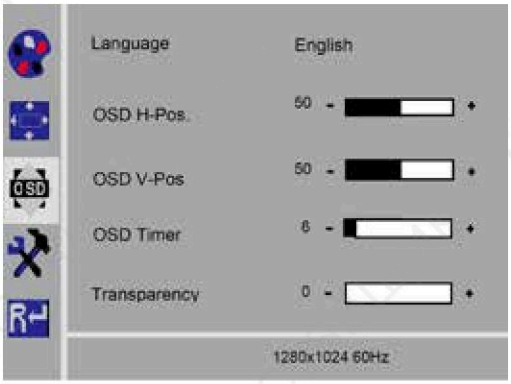


Fig. 31

Other

Picture mode (Mode)
Select the picture mode (PC/games/movie).

Audio Volume – NOT available
Adjust the volume.

Signal Source
Select the signal source (VGA/DVI).
Select 3D DVI for use with the EASY view system.

Aspect Ratio
Select the aspect ratio (16:9/AUTO/4:3).

DCR
Select DCR (Dynamic Contrast Ratio) (on/off).

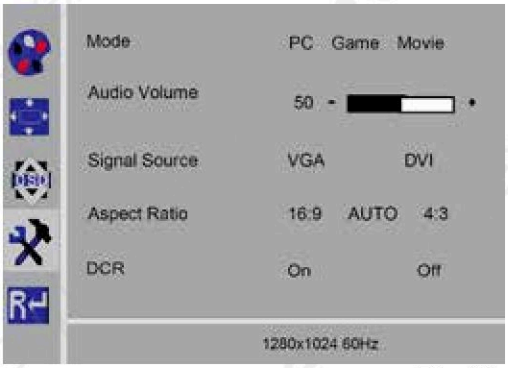


Fig. 32

Reset

Reset
Reset the monitor settings to the Renfert factory settings.

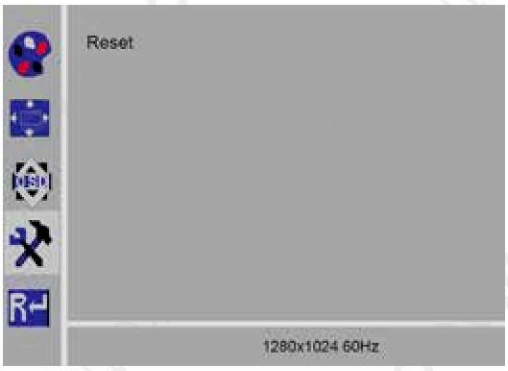


Fig. 33

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Self-diagnosis

If there is no image, a self-diagnosis window is displayed.

The self-diagnosis function checks whether a signal is present.

"No Input Signal" is displayed when the D-Sub connector is plugged in, but the monitor is in DPMS mode or when the analog signal cable is not plugged in.



7 Accessories

The following describes how to connect and operate accessory components to the system. These components are not included in the scope of supply. They can be ordered separately as accessories (see the "Accessories" chapter).

If non-Renfert accessories are used, no warranty can be assumed for the functionality. If necessary, device-specific settings settings are required on the additional device.

7.1 EASY view 3D HDMI-Video-Recorder

With the HDMI-Video-Recorder, video sequences can be recorded with audio on a USB memory stick.

To do so, the HDMI-Video-Recorder is inserted between the head and the monitor.

The USB stick is connected to the HDMI-Video-Recorder.

7.1.1 Connecting

The HDMI-DVI-cable of the monitor must be replaced with the HDMI-HDMI cable of the HDMI-Video-Recorder (included).

⇒ With the exception of the power supply (20, Fig. 2), remove all connectors from the head.

⇒ Remove the retaining clips and remove the cable duct.

⇒ Pull the HDMI-DVI cable of the monitor out of the cable duct.

⇒ Insert the HDMI-HDMI cable of the HDMI-Video-Recorder into the cable duct using the insertion aid. Refer to Chapter 8.3

⇒ Put retaining clips back on and secure cable duct to the support arm.

⇒ Connect the HDMI-HDMI cable of the HDMI-Video-Recorder to the head in the connection (21, Fig. 2) and to the HDMI-Video-Recorder to the connection HDMI IN (51).

⇒ Plug the HDMI-DVI cable of the monitor to the HDMI-Recorder connection HDMI OUT (50).

⇒ Insert another USB stick into the connection USB HOST (53).

⇒ Connect the HDMI-Video-Recorder's power supply to the connection DC IN (52). Ensure that the color coding is correct between the connection cable and socket!

⇒ Insert the power plug into the building installed wall socket.

♦ The signal LED (55) turns green, signaling the system is ready to record.

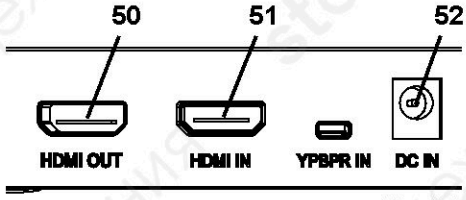


Fig. 34

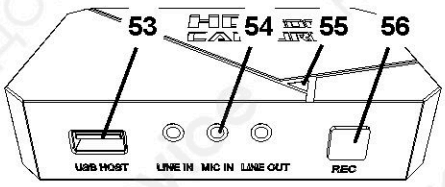


Fig. 35

If the supplied USB stick is used as a storage medium and connected to the HDMI-Video-Recorder, screen shots can not be recorded. If both screen shots and video sequences are to be recorded, a second USB stick must be used.

Recording is not possible until about 30 seconds after switching on the HDMI-Video-Recorder or 30 seconds after the USB stick has been inserted.

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7.1.2 Recording video

When the HDMI-Video-Recorder is connected, video sequences can be recorded on a connected storage medium such as the USB stick. The screen data, which is sent from the head to the monitor, is recorded.

Video sequences can be recorded in both 2D and 3D modes. In order to be able to view 3D video sequences at a PC later, a 3D-capable monitor and 3D glasses are required.

To record video sequences:

⇒ Press the REC button (56, Fig. 35) on the HDMI-Video-Recorder.

- ♦ Video recording starts.
- ♦ The signal LED (55, Fig. 35) turns red.

⇒ Press the REC button on the HDMI-Video-Recorder again.

- ♦ The video recording is stopped and the data is stored on the storage medium.
- ♦ The signal LED flashes red, the data is saved.
- ♦ The signal LED turns green and the HDMI-Video-Recorder is ready for recording again.

When the signal LED is red or flashing, the USB memory stick should not be removed, as the data will not be stored correctly and data loss will occur.

7.1.3 Recording video with sound

With the included headset, comments can be added to the video sequences during recording.

To do so, the microphone of the headset must be connected.

⇒ Plug the microphone cable of the headset (pink plug) into the MIC IN connection (54, Fig. 35) (pink mark).

The green plug of the headset should not be plugged into the green LINE-OUT jack, otherwise a constant, quiet noise will be audible.

In order to save the video with music, for example, an external audio source can be plugged into the blue LINE-IN connection.

7.2 EASY view 3D HDMI-Splitter

With the EASY view 3D HDMI Splitter, a 3D or 2D video signal can be sent to a second Renfert 2D/3D monitor. The signal is multiplied but remains unchanged. This can be used for training purposes, for example.

For this purpose, the head is connected at the input of the HDMI-Splitter and one monitor is connected to each of the two outputs.

When using a standard PC monitor, only a 2D display is possible.

For output on other 2D devices (e.g. TV, monitor, projector, beamer), the Easy View Converter 3D/2D (see 7.3) is required.

7.2.1 Connect

The HDMI-DVI cable of the monitor must be replaced for the included HDMI-HDMI cable.

The HDMI-DVI cable of the monitor must be replaced for the included HDMI-HDMI cable. To replace the HDMI-DVI cable for the included HDMI-HDMI cable, see Chapter 8.3 and the illustrated instructions at the end of this manual.

After replacing the cable:

⇒ Insert HDMI-HDMI cable into the head and the HDMI-Splitter input (58).

⇒ Insert HDMI-DVI cable of monitors into HDMI-Splitter output (59, 60).

⇒ Connect power supply unit of HDMI-Splitter at power input (57). Ensure that the color coding is correct between the connection cable and socket!

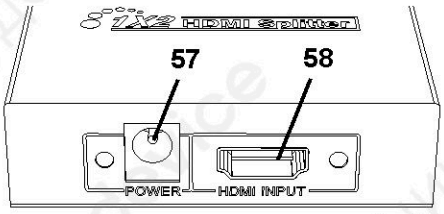


Fig. 36

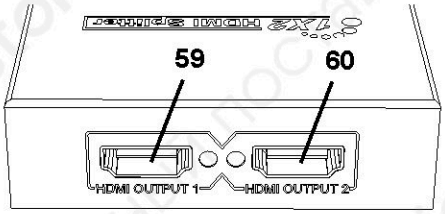


Fig. 37

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7.3 EASY view 3D Converter 2D/3D

With the EASY view 3D Converter 3D/2D, a 3D video signal can be sent to the existing 3D monitor and a 2D video signal to an additional 2D device (e.g. TV, beamer, etc.).

The ideal solution when working in 3D mode (for example, trainer / demonstrator), when the audience is following along via an additional 2D output device without 3D glasses. For this purpose, the head is connected to the input of the converter 2D/3D, to the 3D output of the 2D/3D Renfert monitor and to the 2D output of any other 2D device.

7.3.1 Connect

The HDMI-DVI cable of the monitor must be replaced for the included HDMI-HDMI cable.

To replace the HDMI-DVI cable for the included HDMI-HDMI cable, see Chapter 8.3 and the illustrated instructions at the end of his manual.

After replacing the cable:

⇒ Plug the HDMI-HDMI cable to the head and to the 2D/3D converter in-connection (62).

⇒ Plug HDMI-DVI cable of the monitor to the 2D/3D converter 3D out connection (61) and to the monitor

⇒ Plug in the HDMI cable of the digital device at the converter 2D/3D-Out 2D (63). This cable is not included in delivery of the converter 2D/3D.

⇒ Connect the power supply of the converter 2D/3D to the 12 VDC input (64).
Ensure that the color coding is correct between the connection cable and socket!

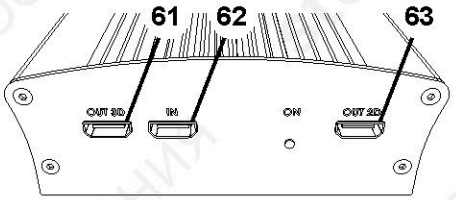


Fig. 38

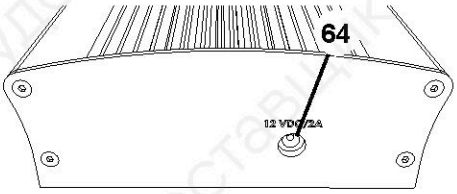


Fig. 39

8 Cleaning / Maintenance

The device does not contain any internal parts that require maintenance.

Only wipe the housing with a damp cloth. Use only a slightly moistened cloth.

Do not use any spray or disinfectant or other cleaning agents.

Do not use compressed air for cleaning.

Clean monitor only with a dry cloth.

Because of the natural product used, the desk pad may build an oily coat. It is possible to wipe it off with a grease dissolving cleaning agent such as a commercially available dishwashing liquid.

8.1 Cleaning the lighting

CAUTION!
Risk of getting burned on hot lenses of the lighting!
Clean only when the unit is switched off and has cooled down.

Do not clean the lenses of the lighting with cleaning agents.

Clean only with a slightly moistened cloth.

8.2 Cleaning / replacing the protective glass

The camera optics are protected by a protective glass.

It can be removed for cleaning and replacement.

CAUTION!
Risk of injury if broken!
Do not bend protective glass, it may break. Wear protective goggles and protective gloves!

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CAUTION!
Danger of being temporarily blinded if lighting is turned on suddenly.

⇒ Disconnect the power supply from the head (20, Fig. 2).
⇒ Tilt head upwards.
⇒ Push in tab on the underside.
⇒ Pull protective glass out.
⇒ Clean/replace the protective glass.
⇒ Push in the protective glass until the tab latches in again.

When sliding the safety glass:
- Do not allow it to get wedged
- Do not bend
- Use a cloth to avoid fingerprints.

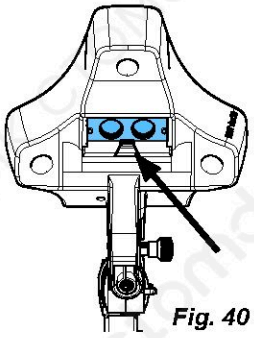


Fig. 40

8.3 Removing the cable from the cable duct / guiding it into the cable duct

For various reasons – for example, when connecting an HDMI-Video-Recorder – it may be necessary to remove cables from the cable duct on the support arm or insert new ones.

See also the illustrated instructions at the end of this manual.

The cable of the power supply of the head is integrated into the support arm and cannot be removed.

8.3.1 Removing cables

⇒ With the exception of the power supply (20, Fig. 12-a), remove all connectors from the head.
⇒ Pull the HDMI cable straight out of the back and then remove it from the retaining clip.
⇒ Remove the cable duct from the support arm.
⇒ Remove the retaining clip.
⇒ Remove the cable tie at the foot end of the cable duct. Make sure that no cables are damaged.
⇒ Pull the desired cable out through the ribs of the cable duct.

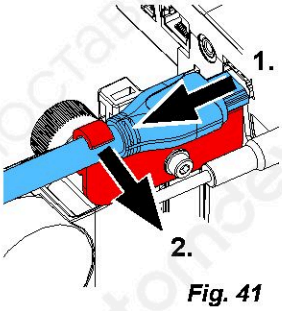


Fig. 41

8.3.2 Inserting cables into the cable duct

Two retaining clips are designed as an insertion aid for inserting new cables.

⇒ Place the cable duct on a flat surface.
⇒ Use the insertion aid to grab the cable already in the cable duct.
⇒ Push the insertion aid together completely.
⇒ With the tapered end first, push the insertion aid into the cable duct 3 or 4 ribs deep.
⇒ Feed the plug of the cable to be fed through the insertion aid and press the cable into the cable duct that has been opened by the insertion aid.



Fig. 42

Make sure that the plug is inserted from the correct side.

⇒ Hold the cable duct securely behind the insertion aid.
⇒ Pull the insertion aid and plug of the cable to be fed through the cable duct to the other end. Make sure that the plug does not slip out of the insertion aid.
⇒ Remove the insertion aid.
⇒ Pull the cables through so that they protrude about 20 cm past the cable duct on the side of the EASY view 3D head so that the head is not hindered when it pivots.
⇒ On the opposite side of the cable duct, secure the cables to the cable duct with cable ties so they cannot slip.
⇒ Clip all the retaining clips onto the cable duct and secure the cable duct to the support arm.

Retaining clips designed as an insertion aid fit on the upper part of the support arm, the other clips go on the lower part.

⇒ Insert the cables into the head.
⇒ Plug the HDMI cable into the retaining clip and then plug it straight into the socket.
⇒ Reconnect the other side of the cables.

Multiple cables can also be fed through together.

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8.4 Spare parts

You can find components subject to wear and the spare parts on the spare part list in the internet at **www.renfert.com/p918**.

Enter the following item number: 24000500.

The components excluded from the warranty (such as consumables or parts subject to wear and tear) are marked on the spare part list.

Serial number and date of manufacturing are shown on the type plate of the unit.

9 Troubleshooting

Error	Cause	Solution
Image cannot be focused.	• Display switched to 3D and 3D glasses not used.	• Switch to 2D. • Use 3D glasses.
Focus moves.	• Head moves down on its own.	• Retighten the clamping screw for height adjustment (35, Fig. 11) (see Chapter 4.3.4).
Light cone moves.	• Head folds down on its own.	• Retighten fastening screw (31, Fig. 10) (see Chapter 4.3.4).
No lighting.	• The system is in stand-by mode.	• Move mouse or move hand under the cameras.
No network access to USB stick.	• No network cable connected to the network extension cable. • IP address has been changed.	• The network cable used to connect to a switch or router is not included. • Check that the IP address displayed on the screen matches the one entered in the transfer program.
No 3D image can be seen.	• 3D glasses not used. • Monitor poorly aligned. • 3D calibration changed. • PC monitor is connected to EASY view 3D HDMI Spiltter.	• Put on 3D glasses. • Align the monitor so that the view is perpendicular to the monitor (see Chapter 4.3.3). • Calibrate the display. See the description on the internet at **www.renfert.com/p918**. Enter the following item number: 24000500. • When using EASY view 3D HDMI splitter, a 3D image can only be viewed on a Renfert 3D/2D monitor.
Head without function.	• The EASY view 3D power supply unit was plugged into the foot switch connection.	• Connect the power supply unit and foot switch correctly, observing sections 4.4.1 and 4.4.2. • If the head is still without function after correct connection, it was damaged by the previous incorrect connection. • Contact Renfert Service.
Monitor displays image errors / stripes.	• Cable plugs have come loose. • Non-Renfert cable used.	• Check the cable and screw the DVI plug into the monitor. • Use Renfert cable.
Head lowers by itself.	• The fastening screw (31, Fig. 7) is not tightened tight enough.	• Retighten fastening screw.
Support arm can be swiveled away too easily or swivels away by itself.	• The supporting surface of the universal clamp is uneven.	• Make the universal clamp even and level. • Attach an adhesive tape strip to the aluminum pin of the support arm (under the black plastic sleeve).

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Error	Cause	Solution
EASY view 3D HDMI Splitter		
No 3D image on a connected PC monitor.	• No error! On EASY view 3D HDMI Splitter, only 2D images are displayed on PC monitors.	• Change EASY view 3D to 2D image view. • If a 3D display required, use a another Renfert 2D/3D monitor (Accessories).
No image on additional 2D device.	• 2D device is not fully HD capable. • Incorrect device settings.	• Use full HD capable PC monitor. • Use the Renfert 2D/3D monitor (Accessories). • Check 2D device settings (e.g: 1080p60).
No image displayed on the connected TV device.	• No error! Only EASY view 3D Renfert 2D/3D monitors or PC monitors can be connected to the HDMI Splitter.	• Use full HD capable PC monitor. • Use the Renfert 2D/3D monitor.
EASY view 3D Converter 2D/3D		
No 3D image can be viewed on the Renfert 2D/3D monitor.	• 2D/3D connections are mixed up.	• Check, that the Renfert 2D/3D monitor is connected to the 3D port and the additional 2D device is connected to the 2D port.
No 3D image is displayed on the connected TV device.	• No error! Only 2D images can be displayed on TV devices.	• If a 3D display is required on a different monitor, use the EASY view 3D HDMI Splitter together with a second Renfert 2D/3D monitor (Accessories).
No image displayed on the connected 2D device.	• 2D device is not fully HD capable. • Incorrect device settings. • Incorrect signal input is set on 2D playback device.	• Use a full HD capable 2D device. • Check 2D device settings (e.g: 1080p60). • Check settings, consult the 2D device manual if necessary.

10 Technical data

10.1 Head (incl. support arm)

Nominal voltage:	**100 / 120 / 230 V**
Permissible mains voltage:	100 - 240 V
Mains frequency:	50 / 60 Hz
Power consumption:	13.5 W
Video resolution:	FullHD (1920 x 1080)
Focus distance:	430 mm [17 inch]
Magnification:	15x / 20x
Approx. illuminance:	40,000 lux
Color temperature:	5,000 kelvin
USB memory stick capacity:	4 GB
Number of storable images, approx.:	600
Max. video sequence length, approx.:	15 minutes.
Max. distance between mounting point of support arm and screen center:	615 mm [24.2 inch]
Action radius of support arm:	850 mm [33.5 inch]
Max. table top thickness with universal clamp:	18 - 74 mm [0.71 - 2.92 inch]
Max. table top thickness with screw mounting:	max. 26 mm [1.02 inch]
Weight (incl. support arm):	2.1 kg [4.63 lbs]
Weight (Head):	0.7 kg [1.54 lbs]

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10.2 Monitor

Nominal voltage:	100 / 120 / 230 V
Permissible mains voltage:	100 - 240 V
Mains frequency:	50 / 60 Hz
Power consumption:	25 W
Screen resolution:	1920 x 1080 pixels
Dimensions with stand (Width x Height x Depth):	511 x 377 x 170 mm [20.12 x 14.84 x 6.69 Inch]
Diagonal screen size:	546,1 mm [21.5 Inch]
Weight (incl. power supply):	3,65 kg [8.0 lbs]

11 Guarantee

Renfert gives a **3-year guarantee** on all parts of the device provided that the product is used in accordance with the operating instructions.

The original sales invoice of the specialist depot is required for a claim under guarantee.

Parts which are subject to natural wear and tear (wear parts) and consumables are excluded from the guarantee. These parts are marked in the spare part list.

The guarantee is rendered void in the case of incorrect use, non-adherence to the operating, cleaning, servicing or connection instructions, repairs carried out by the owner or repairs that are not carried out by a specialist firm, use of replacement parts from another manufacturer or unusual or unapproved uses not specified in the user guidelines.

Successful claims under guarantee do not extend the guarantee period.

12 Disposal Instructions

12.1 Disposal of the device

The unit should be disposed of by a specialist firm. The specialist firm must be informed of any hazardous residue in the unit.

12.1.1 Disposal instructions for countries in the EU

To conserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission adopted a directive that requires the manufacturer to accept the return of electrical and electronic units for proper disposal or recycling.



Within the European Union units with this symbol should not be disposed of in unsorted domestic waste.

For more information regarding proper disposal please apply at your local authorities.

12.1.2 Special instructions for customers in Germany

Renfert electrical devices are commercial equipment.

These devices may not be disposed of at municipal collection points for electrical equipment, they must be taken back directly by Renfert.

You can find out about the current options for return in the internet at **www.renfert.com**

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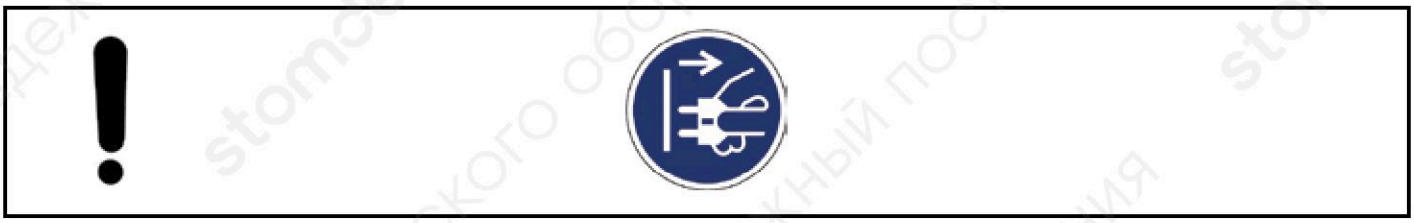
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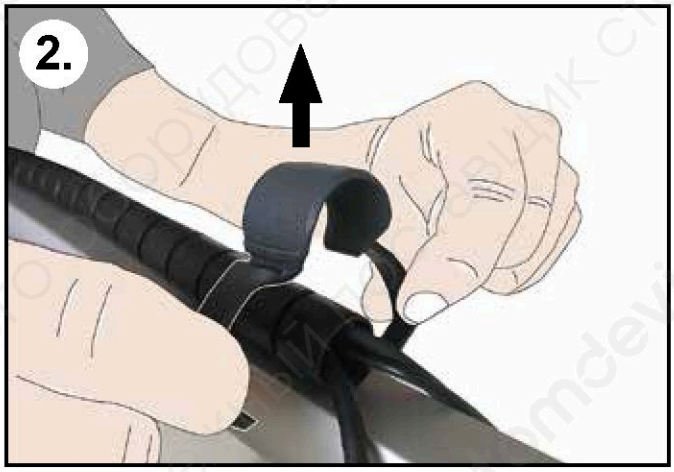
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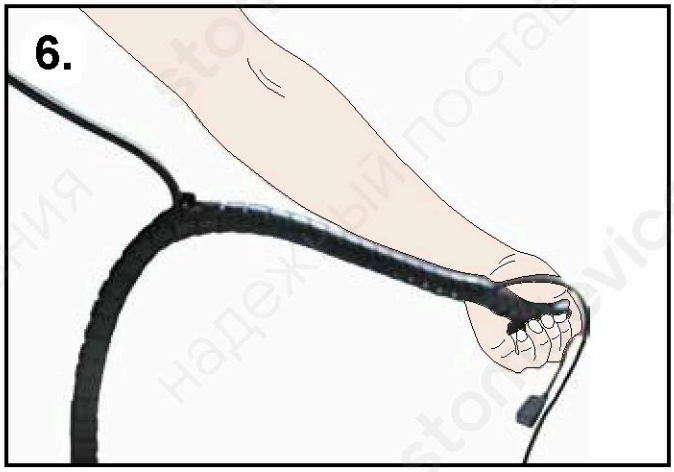












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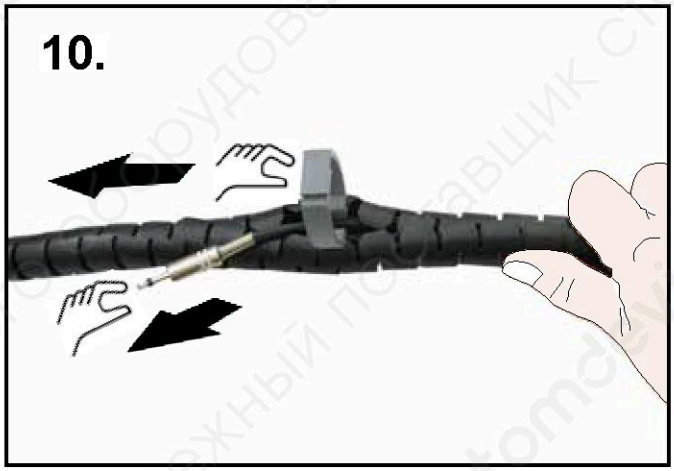
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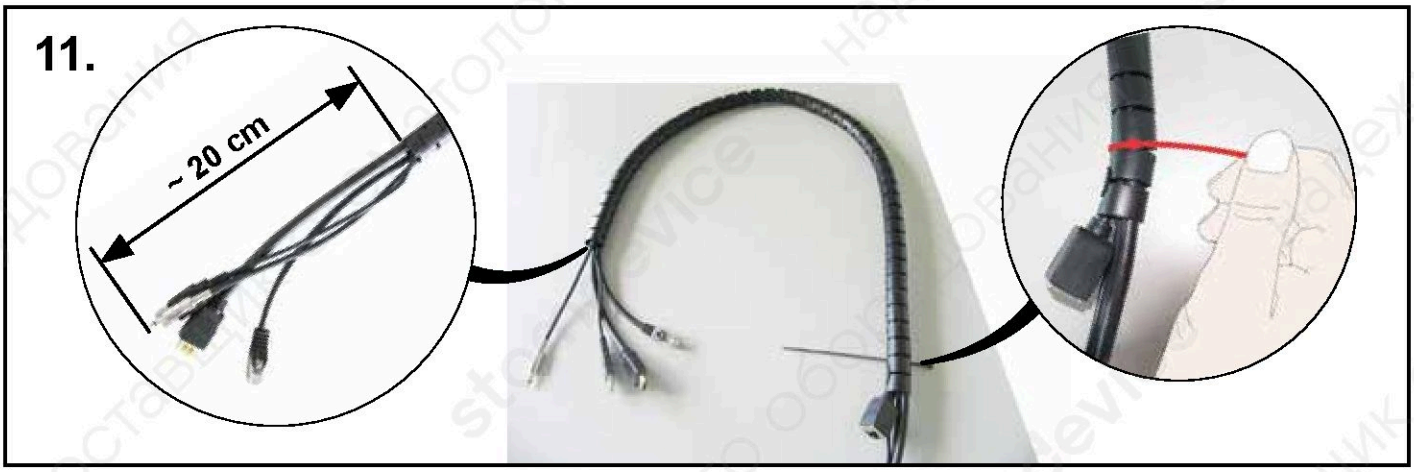
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