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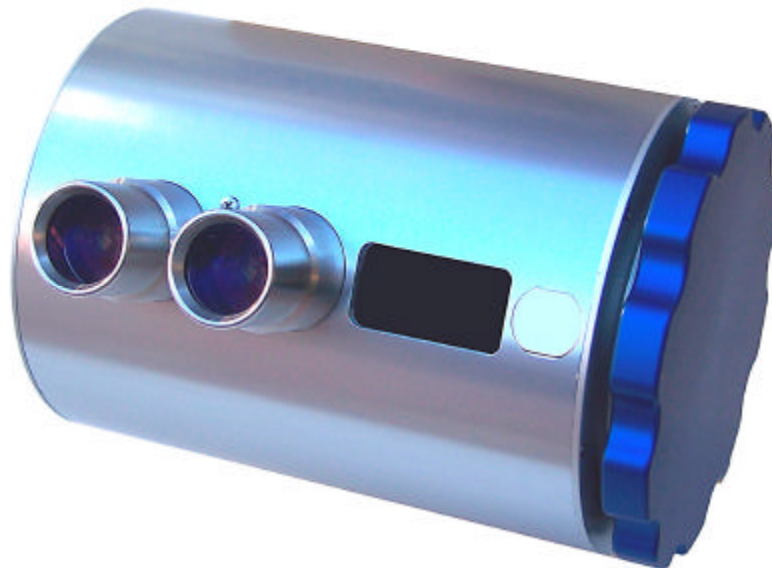


Design and production of stereoscopic instruments.

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User manual of the 10 slide rotary viewer model 2003 manual advance mechanism



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Introduction

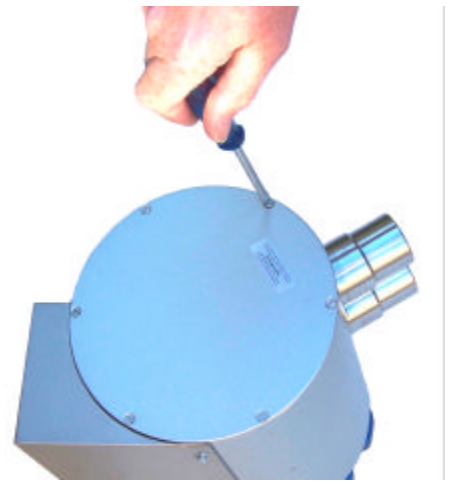
This viewer is the result 30 years of experience in building high quality 3D slide viewers for public use. Each change in the previous models extended the durability, stability and the quality. Especially this 10-slide rotary viewer 2003 has been adapted for the demand to show short 3D slide series to large amounts of public to be informed. To give any idea about the changes with respect to the previous model:

- The slide drum is available in the motor driven as well as the hand-operated version.
- The viewer can be mounted against a wall and it does not need any cover or housing to hold the mechanical parts.
- The new CCFL lamp provides a bright cool white light source without any start-up flickering.
- This viewer is also suited with an automatic return to slide N° 1 in the motor driven version.
- External control by means of a Personal Computer is possible.
- A simple 12 Volts dc adapter provides a safe power source.

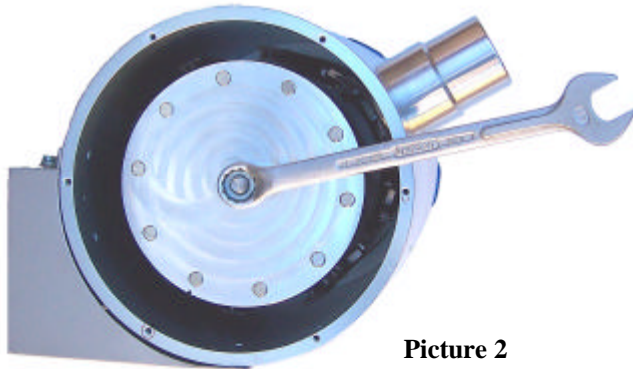
1. First indications for operational use

1.1 Opening the viewer for exchanging the slides.

- For exchanging the slides you have to remove the left cover of the round housing; see the image. That is NOT the side where the text window and the pushbutton are located.
- Remove the 6 bolts and remove the cover (picture 1)



Picture 1

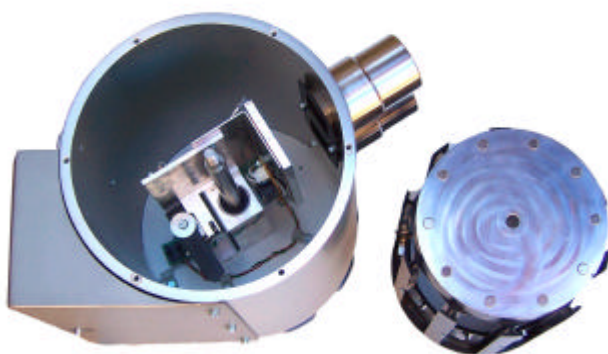


Picture 2

- Now you see the round slide drum with a large nut in the middle, take a bolt spanner, hold the drum with your hand and remove the nut (picture 2).
- Put your hands around the drum and push with your thumb on the spindle to draw the drum from the spindle out of the viewer (picture 3).



Picture 3



Picture 4



Picture 5

- Now you can insert or exchange your slides. Keep the order and position of the slides in mind that they won't be presented up side down! (Picture 4 and 5)
- After exchanging the slides you can replace the slide drum in the viewer. **Be careful with inserting.** Replace the nut on the spindle using the spanner and replace the cover.

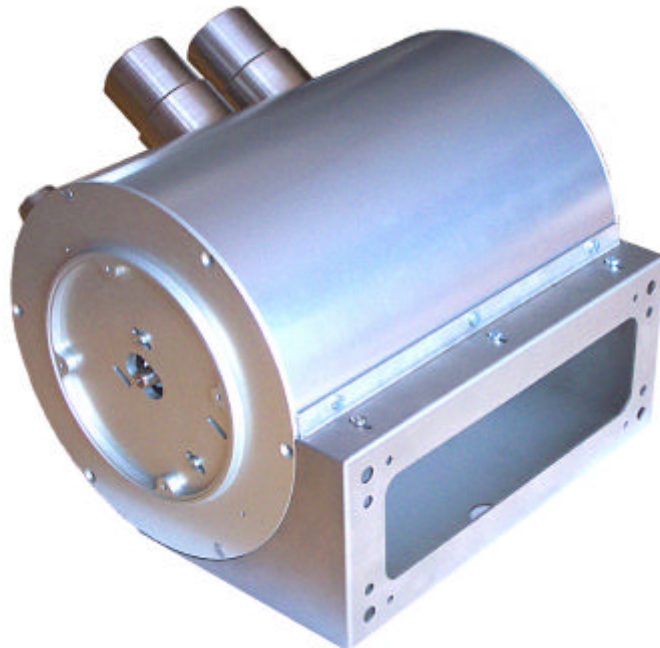
1.2 Where do I place the viewer?

Obviously you already have chosen a spot for the viewer in your museum, exhibition or other public environment. Here are some considerations that might help you to check the spot;

- ?? Keep in mind the height of the viewer. Children and grown-ups both want to look in the viewer!
- ?? Depending on the interest of the viewer, people might form a queue. This could cause congestion for the rest of the public.
- ?? Watch out for sunlight coming through the lenses! The lenses will act like burn glasses on the slides. A few minutes in the sun will cause enough damage to the slide that it should be replaced. Within 1 day, in worst case, you have to replace all slides. You can see this on the slide like tiny little white spots showing the track of the sun during the day.
- ?? Avoid spotlights to be shining on the lenses. The slides are not going to be burned but it does shorten the lifecycle of the slide.
- ?? When the viewer is to be mounted inside some kind of panel, be sure you can get easy access to the viewer for replacing the slides.

1.3 How do I mount the viewer against a wall?

The 10 slide rotary viewer holds a bracket at the back that has several holes to attach the viewer with screws or bolts against a wall. First you have to remove the 3 bolts on the top of the bracket (see the image) and the bolts underneath the viewer to position the bracket only against the wall. Think about how you want to let the cables run through the bracket; are they going through the wall or do they go through the hole at the bottom of the bracket?



2. Manual operation (without PC control)



In this situation, the rotary viewer is used in stand-alone mode, without any external devices.

2.1 Two operational modes:

The rotary viewer is able to work in 2 different modes. These modes are configurable using the small switches inside the viewer. To get access to these switches follow the next directions:

- Removing the 6 bolts of the right cover of the viewer (the side where the hand wheel is located, picture 6).



Picture 6

- The next step is not easy. Lift the cover just a little bit and you will see that the power cable is obstructing the cover to come free.
- You can lift the cover a little more and lead the power cord through the hole at the rear.
- Gently take the mechanical interior out of the housing and take care of the power cord.
- Now you see the 4 small switches and the time adjustment for the lamp.

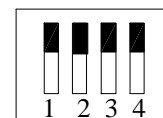
Picture 7



At the right you see an illustration of the dipswitch. The black square marks the position of the switch.

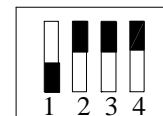
Mode 1:

After the pre-set shut-off time, the lamp turns off



Mode 2:

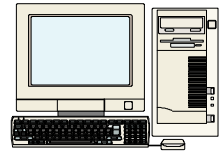
The lamp is always on



- You can adjust the shut-off time of the lamp by turning with a screwdriver the knob beside the small switches inside the viewer. Turning counter clockwise will increase the time, turning anticlockwise will decrease it.

4. External control (with PC)

In this situation, the rotary viewer is able to operate according to a configured program with audible explanation of the slide. An IBM compatible PC is required to work with the accompanied software of the rotary viewer to control the rotary viewer.



4.1 Setting up the equipment and cable connections

List of materials:

- ?? 10 slide Rotary viewer of 'de Wijs' model 2003
- ?? One 12 Volts dc adapter for the rotary viewer.
- ?? Language panel (if you need it).
- ?? 1 Euro connector power cables for the computer
- ?? 1 parallel extension cable with a male D25 and female D25 plug.
- ?? An IBM compatible x86 computer with at least 1 free parallel printer port connector and CD-ROM player, complete it with the usual keyboard, monitor, etc. (mouse not necessary)
- ?? 3.5" Boot disk for the rotary viewer.
- ?? An audio cable with 2,5 mm stereo jack to double cinch or headphones.

Connect all cables according to the connection diagram (chapter 6.2). Set the small switches at the back of the rotary viewer according to the picture on the right.



For more information about the how to configure the computer and to make audio tracks, take a look at the software manual that can be downloaded at www.dewijs-3d.com at the technical support download page.

6 Data

6.1 Technical specifications of the rotary viewer

Slides:

- ?? Slide frame format; 41x101 mm.
- ?? Maximum picture size; 23x33 mm.
- ?? Compatible with RBT frames, mounted between glass maximum 3 mm. Thickness.
- ?? The drum can hold 10 slides and accompanying text cards.

Optics:

- ?? One lens barrel holds 2 achromatic lenses of ϕ 37 mm. $f = 120$ mm. each.
- ?? Total focal distance is 60 mm.; magnification: 4.2 x
- ?? Lenses are coated on all sides
- ?? Lens separation is fixed to 62 mm.

Illumination:

- ?? The slide is illuminated by a single CCFL (Cold Cathode Fluorescent Lamp) passing its light through a light guide.
- ?? The colour temperature is 5500 Kelvin.
- ?? The lamp runs on 12 Volts dc at ± 300 mA using an inverter.

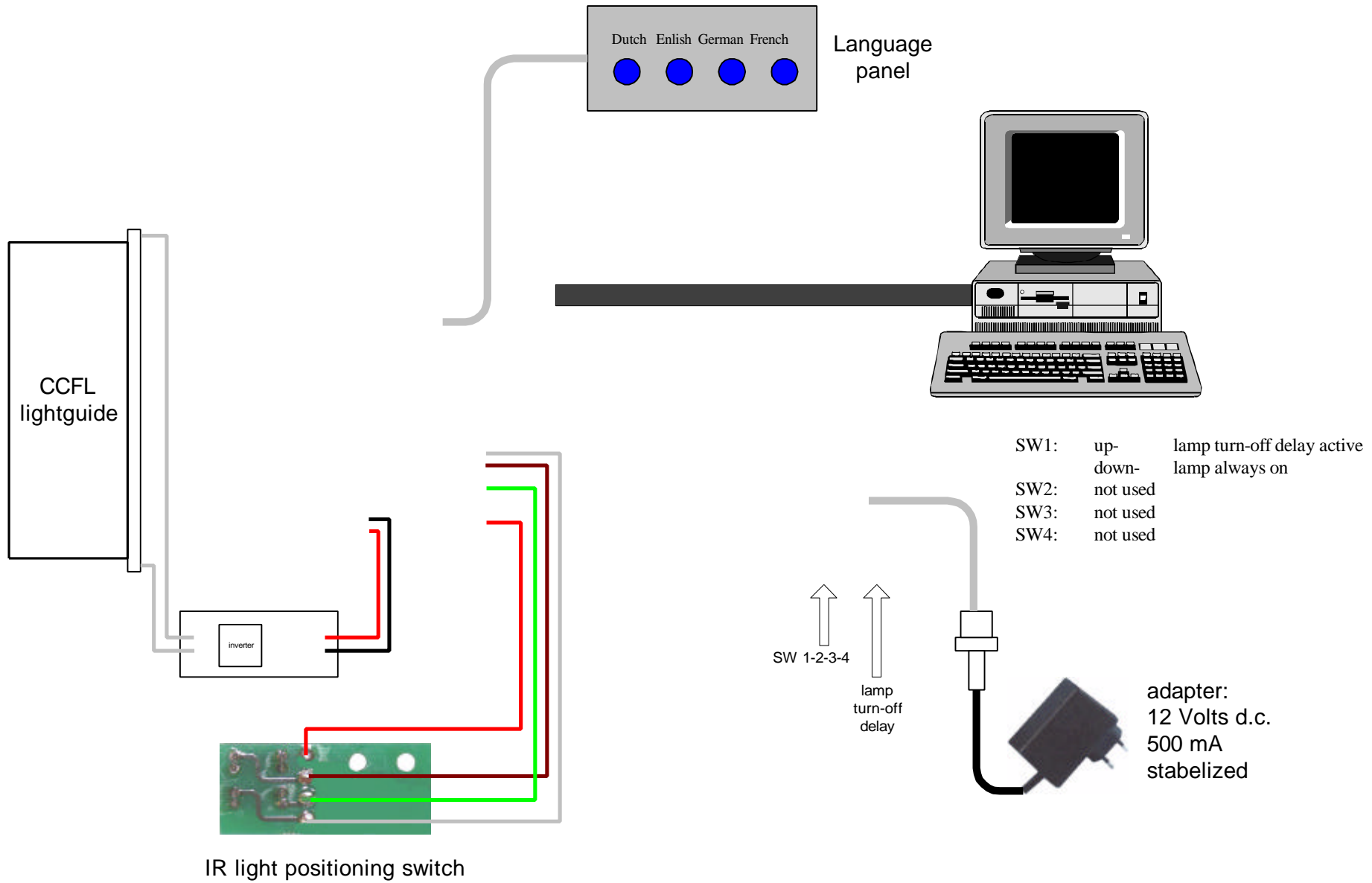
Mechanics;

- ?? The Housing of the viewer is made of plain anodised aluminium. The wall bracket and lens barrels are made of stainless steel.
- ?? The slide drum revolves on ball bearings and don't need any lubrication.
- ?? Permanent magnets are providing a feel-able 'stop' point when turning the hand wheel. The drum is blocked in reverse direction.
- ?? To remove the hand-wheel; hold the internal slide drum and turn the wheel anti clockwise (left turning thread).
- ?? When removing the hand-wheel, you get access to 4 bolts. These bolts make it possible to adjust the focus of the slide drum with regards to the fixed lenses. Do NOT un-fasten these bolts, the focus has been adjusted in the factory very carefully!

Electronics;

- ?? The whole viewer runs on 12 Volts dc. The viewer comes with a 220 Volts AC adapter giving 12 Volts dc. at 500mA.
- ?? The internal circuitry is fused with a 1 Amp. fuse.

6.2 Internal connection diagram



6.3 Connections of the D25 and J3 connector.

D25 connector:

Connector pin	Description computer side and addressing		Description rotary viewer side	Direction looking from computer side.
1	Strobe	Base+2 bit 0	Not used	Output
2	D0	Base+0 bit 0	Change slide, 1= moving	Output
3	D1	Base+0 bit 1	Lamp, 1=lamp on.	Output
4	D2	Base+0 bit 2	Not used	Output
5	D3	Base+0 bit 3	Not used	Output
6	D4	Base+0 bit 4	Loop through to D15 con.	Output
7	D5	Base+0 bit 5	Loop through to D15 con.	Output
8	D6	Base+0 bit 6	Loop through to D15 con.	Output
9	D7	Base+0 bit 7	Loop through to D15 con.	Output
10	Acknowledge	Base+1 bit 6	Button front panel, 1=pressed	Input
11	Busy	Base+1 bit 7	Loop through to D15 con.	Output
12	Paper end	Base+1 bit 5	Light gate 'zero' detection.	Input
13	Select out	Base+1 bit 4	Light gate 'stop' detection.	Input
14	Auto feed	Base+2 bit 1	Not used	Output
15	Error	Base+1 bit 3	Loop through to D15 con.	Input
16	Init	Base+2 bit 2	Not used	Output
17	Select in	Base+2 bit 3	Not used	Output
18	Gnd			
19	Gnd			
20	Gnd			
21	Gnd			
22	Gnd			
23	Gnd			
24	Gnd			
25	Chassis ground			

J3 vertical 8-pin header: (for language selection box)

Connector pin	Description computer side and addressing		Description rotary viewer side	Direction looking from computer side.
1	Busy	Base+1 bit 7	Loop through to D25 con.	Input
2			Ground	
3			+12 Volt.	
4			+5 Volt.	
5	D5	Base+0 bit 5	Loop through to D25 con.	Output
6	D6	Base+0 bit 6	Loop through to D25 con.	Output
7	D7	Base+0 bit 7	Loop through to D25 con.	Output
8	Error	Base+1 bit 3	Loop through to D25 con.	Input
9	D4	Base+0 bit 4	Loop through to D25 con.	Output
10				
11				
12				
13				
14				
15				

6.4 Electronic component list model 03-02-A-H

R1	10K 1/4 Watt IR detect
R2	10K 1/4 Watt IR detect
R3	100K 1/4 Watt
R4	10K 1/4 Watt
R5	100K 1/4 Watt
R6	10K 1/4 Watt
R7	10K 1/4 Watt
R8	100K 1/4 Watt
R9	180 1/4 Watt
R10	Removed in hand wheel configuration.
R11	100K 1/4 Watt
R12	100K 1/4 Watt
R13	10K 1/4 Watt
R14	10K 1/4 Watt
R15	1M 0.15 Watt 10 mm. standing Pot.
R16	10K 1/4 Watt
R17	100K 1/4 Watt
R18	100 1/4 Watt (IR LED's)
R19	100K 1/4 Watt
R20	10K 1/4 Watt
R21	22 1 Watt
C1	47uF 10 Volt axial
C2	100n 50 Volt polyester
C3	4,7uF 50 Volt axial
C4	100n 50 Volt polyester
C5	100n 50 Volt polyester
C6	1000uF 16 Volt Elco rad.
C7	100n 50 Volt polyester
C8	47uF 10 Volt axial
C9	100uF 16 Volt Elco ax.
C10	100n 50 Volt polyester
C11	100n 50 Volt polyester
D1	1N4001
D2	1N4001
D3	1N4001
T1	BC547b
T2	BC547b
T3	BC547b
T4	BC547b
T5	BC547b
U1	4081 Quad And
U2	Removed in hand wheel configuration.
U3	LM555 timer IC
U4	Relays 1x 12V OMRON G5V-1

U5	4071 Quad Or
U6	LM7805 1A
U7	4049UBE
U8	LM555 timer IC
U9	LM555 timer IC
J1	D25 PCB socket 90° male
J2	Header vertical 8 pins
J3	Header vertical 8 pins
2x	Header Socket 8 pins
J4	Header vertical 2 pins
J5	Header vertical 2 pins
J6	Header vertical 2 pins
3x	Header Socket 2 pins
	Shrink contacts for Headers
J7	Header vertical 3 pins
1x	Header Socket 3 pins
SW1	Dip switch 4x 90°
	DIL8 sockets
	DIL14 sockets
	DIL16 sockets
F1	Fuse holder internal metal clamps
2x	Opto switches 5mm. Gap
1x	PCB of de Wijs company.