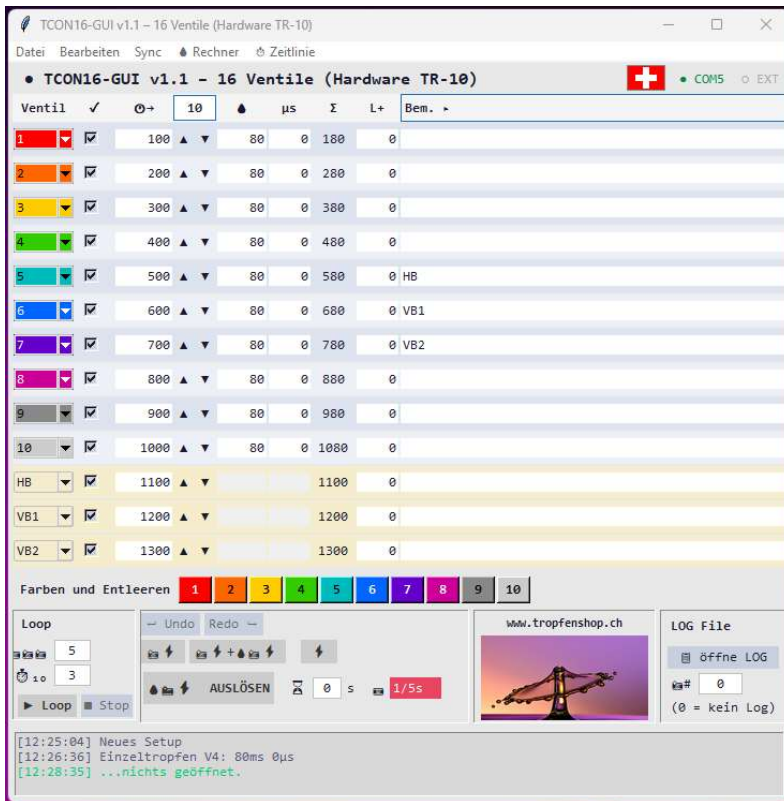


TCON16-GUI v1.1

June 7, 2026 HJ

A graphical user interface (GUI) for the TRICKLER-10 and Windows- .



The **TRICKLER-10** evolved from the “crazyTrickler,” which is no longer available.

The **TR10**, as I will refer to the device hereinafter, is a new development designed to better meet the specific needs of droplet photographers.

The TR10 is both an entry-level device for beginners in droplet photography and a sophisticated tool for the droplet photography pro.

This manual primarily covers only the functions related to the GUI.

General:

The **TCON16_GUI** is a **completely in-house development**

Therefore, it is always possible to fix bugs or address shortcomings. It is also possible to implement your requested changes on short notice.



The TCON16_GUI replaces the existing Trickler-10_GUI_V4.22.

The TR10 is also an in-house hardware development.

There is absolutely no connection to the manufacturers or distributors of the old “crazyTrickler.”

If you have questions about hardware, operation, or new features, please contact info@hansjuergjenzer.ch or visit www.tropfenshop.ch. You'll find more interesting specialty devices there.

Table of Contents

1	Setup	3
1.1	Installation and Start:.....	3
1.2	GUI Language	4
1.3	COM Port.....	4
2	The Menu Bar	5
2.1	File Menu.....	5
2.2	Edit Menu	5
2.3	Sync Menu.....	7
3	 Calculator:.....	7
4	 Timeline:.....	7
5	Photo Log:.....	8
6	Valve Control:.....	9
6.1	Operation and adjustment of settings:	11
7	Photo layer and flashes:	13
7.1	Photo log:	13
7.2	Tutorial: Setting the Photo Lag:.....	14
7.3	Main flash and V1 / V2:	14
7.4	Double exposures:.....	15
7.5	Double exposure tutorial:	15
8	Loop:.....	15
9	Colors and Clear:	16
10	Status / Message Window	16
11	Photo setup and flash.....	17
12	Shutter release:	18
12.1	Wait time AFTER the drop has fallen	18
12.2	Photo setup with additional shutter release.....	18
13	Undo / Redo:	19
14	Useful tips:.....	19
15	Change history.....	19

Coloring in the document:

Green markers indicate special helper functions

Yellow markings are based on experience

Red markings are important and must be taken into account

1 Commissioning

1.1 Installation and startup:

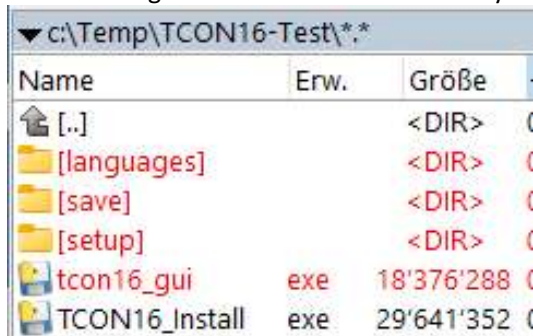
Download the GUI software:

The GUI software can be downloaded for free from the website www.tropfenshop.ch.

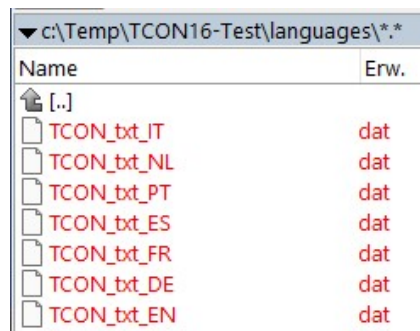
Here is the link: https://tropfenshop.ch/trickler-10_software/.

It is fully functional and can be connected immediately, even to an existing TR-10.

1. Please create a separate folder for your TCON16 area and save the **TCON16_Install.exe** file there.
2. Run the installation file
3. The following will be installed automatically



Name	Erw.	Größe
[..]	<DIR>	
[languages]	<DIR>	
[save]	<DIR>	
[setup]	<DIR>	
tcon16_gui	exe	18'376'288
TCON16_Install	exe	29'641'352

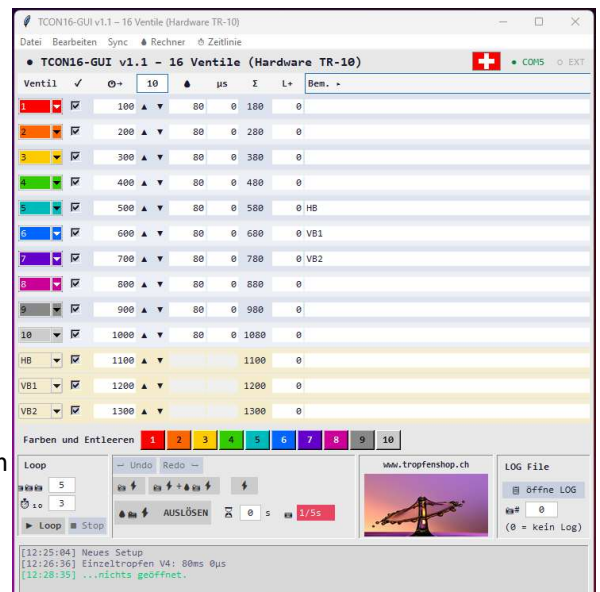


Name	Erw.
[..]	
TCON_txt_IT	dat
TCON_txt_NL	dat
TCON_txt_PT	dat
TCON_txt_ES	dat
TCON_txt_FR	dat
TCON_txt_DE	dat
TCON_txt_EN	dat

4. You can delete the Install.exe file or save it somewhere.
5. Connect the TR-10 to the PC and run **tcon16_gui.exe**
After launching, you will see this window.

- The initial startup configuration is taken from the SETUP.json file in the setup folder.
- After the first close, a last setup.json file.
All your customizations are saved and will be automatically available the next time you start the program.

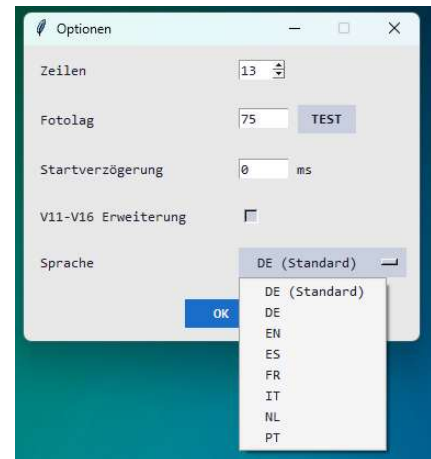
From now on, this last setup.json file is read when the program



1.2 GUI Language

The GUI can be launched in **various languages**.

- Open OPTIONS, and select the desired language.
- The following languages are currently available automatically
STANDARD DE CH
German DE
English EN
Spanish ES
French FR
Italian IT
Dutch NL
Portuguese PT
- You can also create your own language file by translating the file `tcon_txt_de.txt` into your desired language using a translation program (e.g., DEEPL). Save the new file in the Languages folder. It will automatically appear in the dropdown menu under Languages. This should also make languages with different scripts possible (Greek / Russian / Hebrew / Chinese, etc.)



1.3 COM Port

After startup, the GUI automatically searches for the COM port and connects to the PC.

If an error message appears in the text window, you can click Edit/Com Port to attempt a new connection. The result of the connection attempts is displayed in the status window.

The connection is monitored, and the trigger buttons are automatically deactivated if there is no COM connection (buttons = red). If the port reconnects, the buttons automatically switch back to active.

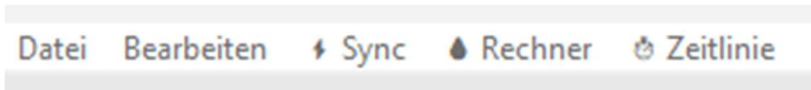
Note: When connecting an older TR-10

*(This applied to the TR-10 GUI. I cannot say how it works with the tcon16_gui.
I no longer have an AZ-Arduino.)*

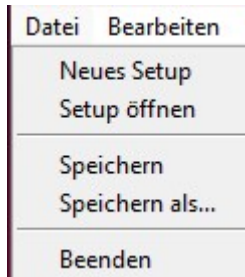
Depending on your Windows version, you may need to install the CH341 driver. Please refer to the TRICKLER-10 QUICK START GUIDE, which is downloaded along with the final GUI.

To ensure a good connection, it is advisable to have as few USB devices connected to the computer as possible—preferably none at all. Once the connection is established, a message will appear in the text window.

2 The Menu Bar



2.1 File Menu



New Setup can be used to start over. This loads the default SETUP.json.

Open Setup can be used to open any old setup from the "save folder".

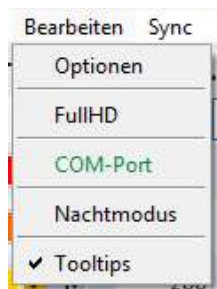
Save Saves the loaded setup with the new settings.

Save As... Saves the current setup under a new name (to be entered).

Exit When closing the GUI via **Exit** or the **X in the top right corner**, the GUI saves the setup in the "setup" folder as "last_setup.json" and automatically loads it when next startup. This way, you can immediately pick up where you left off "last night."

The setups in the "save" folder are simple, individual text files and can be viewed and edited using a text editor. (not recommended)

2.2 Edit Menu



Edit / Options:

Lines:

The user interface is line-oriented. Each line represents a drop or the triggering of a flash. The more drops you need for your image, the more rows you need.

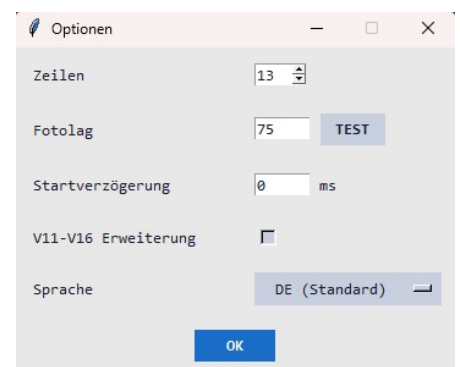
The number of visible rows can range from 5 to 20.

13 rows is the default starting value (10 valves and 3 flashes).

Photo lag:

The photo lag is the time your camera needs from the trigger pulse until the shutter is fully open. This can be set and tested here. Simply connect the camera and a flash to the controller and use the "TEST" button to determine the correct value.

A tutorial and a more detailed explanation of the shutter lag follow below.

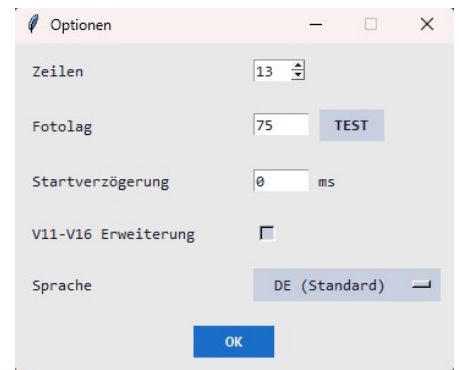


Start delay:

Here you can set a delay that delays the "TRIGGER" button
. The time is set in milliseconds. (1000 = 1 second)

V11-16 Extension:

Here, valves 11-16 can be displayed in the GUI.
This is not yet relevant for the TR-10.
A hardware expansion with an additional controller is coming.
Please inquire if you have an urgent need. [Contact](#)



Language

Already explained in section 1.2

Edit / Full HD:

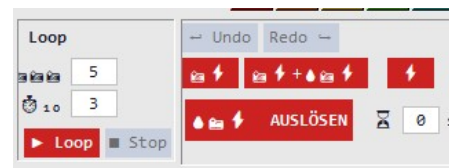
The GUI has been optimized for older monitors (which are often used on a makeshift table in the basement) as well as for people working on a Full HD notebook with a 13-inch screen. Unfortunately, continuous zooming isn't possible; there are only "large" and "small" options. Try them out to see which GUI size works best for you. When FullHD is enabled, the selection is highlighted.

Edit / ComPort:

This menu item indicates whether the ComPort has detected a controller.

- TR10 Active **COM Port**
- TR10 inactive **COM Port**

When the COM port is **inactive**, the buttons are highlighted in red
Clicking on the COM port manually turns the port on or off



Note:

It is recommended to connect the controller directly to the PC whenever possible.
External USB hubs can cause the trigger process to fail.

Edit / Night Mode:

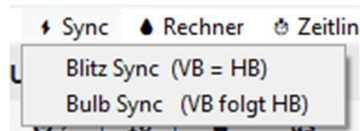
The GUI can be switched from day to night mode.
Just give it a try and be kind to your eyes 🌙 > 😊

Edit / Tooltips:

When this feature is enabled, explanations often appear when you hover over title bars and buttons



2.3 Sync Menu



Flash Sync:

If this menu option is enabled, the start times for VB1 and VB2 are synchronized with the main flash. All times are always set to the main flash time. If this is changed, the VB settings are also updated.

You can still change the other flash times, and this will be taken into account when triggering; however, if you then adjust the main flash time again, V1 and V2 will be overwritten with the main flash time.

This function is intended for using multiple flashes simultaneously when no external flash controller is connected to the main flash

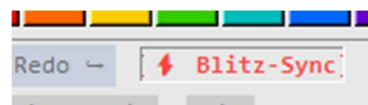
Bulb Sync:

If this menu item is enabled, the start times of V1 and V2 change in tandem with the main flash.

For example, if the flash times are set to HB=400, V1=500, and V2=600, and the "Bulb Sync" checkbox is selected, VB1 and VB2 will increase by 2 ms if the main flash is increased by 2 ms.

The times would then be HB=402, V1=502, and V2=602.

Display: If a sync is activated, this is shown here.

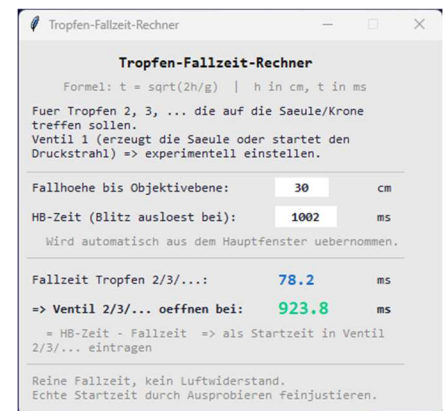


3 Calculator:

The GUI now also offers a drop calculator in a separate window. The window can be placed anywhere on the desktop.

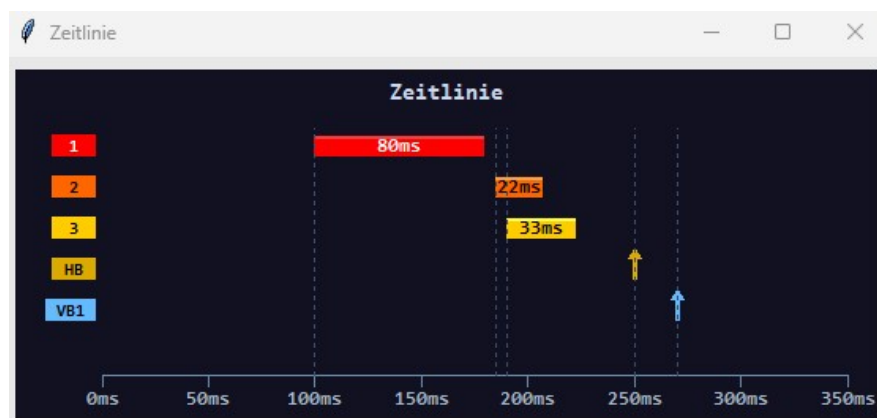
The explanations in the window will have to suffice for now.

I haven't had any experience with it myself yet, so I cannot provide instructions here 😊



4 Timeline:

The GUI now also offers the option to view timelines in a separate window. The window can be placed anywhere on the desktop



The display of the lines and times automatically adjusts to changes in the GUI.

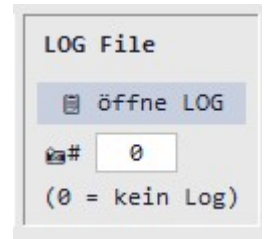
The window can also be resized manually (by dragging).


If changes to the number of lines or flash assignment are not displayed immediately, simply drag the resize the window slightly.

5 Photo Log:

The GUI offers the option to log the set values for each photo. However, only the values that were used are recorded.

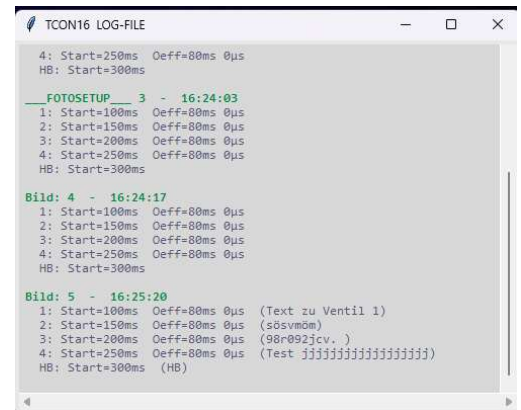
Clicking the "Open Photo Log" button opens a separate window. The window can be placed anywhere on the desktop and resized manually (by dragging).



To create a LOG entry, the image number be entered at  #.

By setting this starting number, the image numbers be adjusted to the number of images on the camera or in a storage folder

The first time the log is used in a new session, a "YYYY MM DD – Log-File.txt" is created in the "Setup" folder. A new log file is created for each new day.



From then on, every time you click the shutter button or activate the trigger input on the controller, a new data entry is written to the log file. The image number is then automatically incremented by 1. The text window updates as soon as a new image is taken and the log window is already open. Of course, logging also occurs when you "collapse" the LOG again.

Photo setups are also logged.

Clicking the photo setup button generates a line with the image number in the LOG.

If the GUI is closed and reopened on the same day, the existing daily LOG is reused, the image number is carried over, and incremented by 1. This ensures continuous numbering within a LOG file.

Experience:

I always work with a direct transfer of the images to the PC.

This makes it possible to specify the storage location and the first image number.

e.g.: Date(YYMMDD)-Image number (230419-001)

This means that matching the image number between the camera/storage location and the log number is no longer a problem.

Note:

If, for any reason, no photo is taken after clicking "Shutter" (camera in standby or off, memory card error, etc.), the photo log continues to increment anyway. As a result, the image numbers between the log and the photos no longer match.

In this case, the image number must be manually changed to the next number that has not yet been photographed.

*Neither the TR10 nor the GUI can verify whether an image was actually saved.
It is assumed that one has been saved.*

6 Valve control:

Ventil	✓	⌚→	10	💧	μs	Σ	L+	Bem. >
1	✓		100 ▲ ▼	80	0	180	0	Stamm
2	✓		150 ▲ ▼	80	0	230	0	Tropfen oben 1
3	✓		200 ▲ ▼	80	0	280	0	Tropfen oben 2
HB	✓		250 ▲ ▼			250	0	HB Folie gelb
VB1	✓		300 ▲ ▼			300	0	VB1 Folie blau

The valves, or the individual drops/flushes to be triggered, are controlled as follows. Each line in the image shown above represents a drop or flash to be triggered. This means up to 20 individual independent actions are possible per process or photo. (Specify 20 lines under Edit/Options)

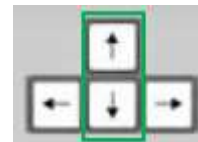
A drop always requires the values for valve number, start time, and opening time.

- Valve number corresponds to the output number of the controller.
- Start time is the time between TRIGGER (+ elapsed start delay) and the opening of the valve.
- Opening time: how long it remains open.

The individual lines are not numbered, as the drops are triggered when it is "time." It is also possible to use the 7th line to trigger the first drop. Of course, for clarity, it makes sense to set the drop sequence chronologically from top to bottom.

Using the keyboard keys

The following special functions are programmed for the UP and DOWN keys in the valve row area:



If the cursor is in a checkbox for the Active/Inactive row, you can use the arrow key to switch rows. The value of the source box is transferred directly to the next one. This makes it possible to quickly enable or disable several rows in succession.



If the cursor is in one of the other input fields, you can move the field up or down. The target field is already fully highlighted so that you can enter new data immediately.

Visualization of time sequences with detailed information as an EXAMPLE

The following image shows the timeline with three markers on the timeline.



Based on the times set above, the sequence looks as follows:

1. The timeline starts (after the start delay has elapsed!) at 0 ms. After that, nothing happens at first.
2. After 60 ms, Valve 1 opens and remains open for 85 ms. This does not mean that it remains open until the 85 ms mark on the timeline is reached, but rather that the duration is calculated starting from the 60 ms mark. Viewed over the entire timeline, Valve 1 therefore closes again at $60 \text{ ms} + 85 \text{ ms} = 145 \text{ ms}$.
3. Valve 3, which is next in the sequence, opens at 170 ms and remains open for 35 ms.
4. Valve 2 opens at 415 ms and closes at $415 + 23 = 438 \text{ ms}$.
5. Finally, the flash follows, which I have set to 455 ms. Flash durations do not have an adjustable opening time; this is fixed at 1 ms.

The advantage of setting the opening time rather than the end time is that it ensures a consistent droplet size. This is because the opening time controls how much water flows out of the valve, i.e., how large the drop is. This way, you can easily move the drops on the timeline using the start time without changing the drop's shape or size.

Earlier, I mentioned that the drops are rendered when it's "time."
You can see what I mean in this image.



Here, I've moved the green drop to a start time of 130 ms. As you can see, this would conflict with the opening time of the yellow drop. But since this is a different valve, this adjustment is possible without any issues.

You could also set the green drop to the same start time as the yellow one and still have the red drop start at 60 ms. It doesn't matter, as long as different valves trigger the drops.



What would work but serve no purpose is to open the red valve again in a different line during the time it is already open. This would only extend the total opening time of this valve.



It is perfectly possible to trigger a valve multiple times. For this, each trigger requires its own line with its own times; the same valve number is always selected. This would look something like this:



6.1 Operation and adjustment of values:

Ventil	✓	🕒→	10	💧	μs	Σ	L+	Bem. ▶
1	✓		100	▲ ▼	80	0	180	0
2	✓		150	▲ ▼	80	0	230	0
3	✓		200	▲ ▼	80	0	280	0
HB	✓		250	▲ ▼			250	0

Valve

The valve number is set using a dropdown list. Clicking the arrow opens the list, allowing you to select the appropriate valve or a flash output. After selection, not only does the number change, but the color also changes to the preset valve color.



Next to it is a checkbox to enable or disable the row.



The start time fields can be entered directly using the keyboard or adjusted with the mouse wheel after double-clicking the field.

There are also arrow buttons. These increase or decrease the respective time by the value shown in the white field between “Start Time” and “Opening Time.” This value can also be changed.



The opening time is adjusted in exactly the same way, except that there are no arrow buttons there. Experience shows that opening time values usually range from about 20 to 150 ms. The mouse wheel is fast enough for this.

The opening time consists of two separate fields.

> In the left field, the opening time is set in milliseconds.

> In the right field, you can additionally set microseconds.

This allows droplet sizes to be adjusted even more precisely. Values from 0 to 999 μs are possible.

If you use the mouse wheel to adjust the setting and skip the 0, the value in the ms field is also increased or decreased.

Experience has shown that adjusting the start time in the μs range is rather pointless, so you can only adjust the millisecond range. The controller operates electronically with μs precision. However, the more lines are activated for valves, the more the actual time value deviates from the set time.

However, since we are not working with known time specifications here, but rather with set values and their adjustment based on actual events, this inaccuracy is irrelevant. It remains constant, unless you suddenly add rows within a session.

In contrast, the repeatability is very precise.

Experience:

Unfortunately, very inaccurate solenoid valves are often used. This tends to negatively affect the repeatability of the droplet shape in the images.

Therefore, care should be taken to use high-quality solenoid valves.

The total time window displays the end time of the respective drip (start + open time).

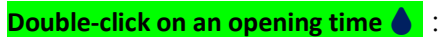
Σ a) The complete duration of a trigger is visible in the timeline.

Same valve numbers = multiple activations of the same valve

The GUI cannot compare the values in the Sum window with each other.

Therefore, this window also serves as a small aid to help keep track of valve time overlaps, in the case of the same valve number, a bit better.

The only thing to note here is that valves require approx. 20 ms to open. Therefore, the second start time should be increased by at least these 20 ms. (However, this depends on the valves used)



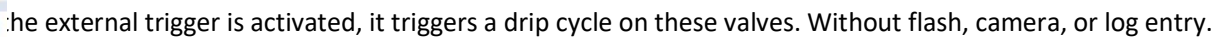
It is possible to trigger a single drop without a camera or flash, e.g., to align the position of a valve. To do this, double-click on an opening time. This opens the corresponding valve in that row for the set time and triggers a drop.

Triggering a single drop with external start:

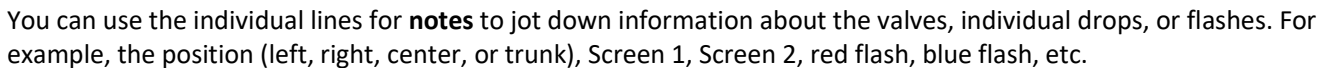
Clicking [ **right**] on an opening time highlights it in green.

A maximum of 4 valves can be marked. The 5th mark deletes the first one.

Right-clicking again removes the selection.



Note and comment:



SFB Technique (Splash From Below)

Especially when the valves are used as air pressure triggers, this greatly aid in understanding the processes.

These notes are also saved in the LOG file.

Switching between Note <> Comment

Clicking on [Note] in the title bar activates the comment field.

Visible between the last valve row and the trigger area at the bottom.

Here you can enter text regarding the entire setup.

This text is also saved.



7 Photo setup and flashes:

For serious droplet photography, it is absolutely essential to use external flashes.

Please do not use the camera's built-in pop-up flash!!!

Be careful with old flashes as well; they can conduct the trigger voltage through the flash connector and destroy the controller.

Experience:

I have achieved good results with YongNuo flash units (YN-560 and its successors). They are affordable and easy to adjust. Of course, you can also use the flashes of your own preference or those from the camera manufacturer.

However, it is **important** that all flashes used simultaneously come from the same production series.

This best ensures identical flash durations at the same settings.

Buying additional flashes months or years later is therefore not a good idea. This can result in visually extended burn times overall.

7.1 Photo magazine:

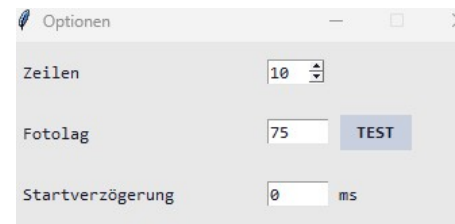
The GUI is used to set only the flash, not the camera's shutter speed.

The goal of droplet photography is to capture the shape of the droplet. The flash does this much more accurately than the camera shutter, unless you have a camera with a shutter speed of $<1/15,000$ s 🥳🎉.

That is why the "**Photo Lag**" option is available in the Options menu.

The time entered here triggers the camera by this amount (e.g., 75 ms) before the main flash. This ensures that the aperture is fully open.

You'll have to figure out exactly which value you need on your own. It depends on the camera.



Experience:

It is quite possible that this value will change at some point.

I worked with a LAG of 64ms for 2 years. For reasons that remain unknown to this day, this value changed to 125ms one day. Same camera, identical firmware, same controller. Currently, it's back at 75ms 🙄

7.2 Tutorial: Setting the Photo Lag:

First, of course, connect the camera and a flash unit to the TR10.

Set the camera to manual, turn off autofocus, aim the camera at an object, and adjust the focus.

To take a clear photo, close the aperture enough so that the object illuminated by the flash is clearly visible in the image and stands out from the background.

To determine the photo delay, it is recommended to start with a relatively long exposure time (e.g., 1/2s) and a photo delay setting of approximately 100 ms.

Open the Options window (Edit/Options) and click on "TEST"

The subject should now be visible in the photo. If it isn't, adjust the exposure until it is clearly visible. Take a few test shots to see if the exposure is correct.

Sometimes only half the image is exposed. This means the shutter isn't fully open yet. Adjust the exposure accordingly.

Now reduce the exposure time again step by step.

If the flash is no longer visible at some point, reduce the exposure until it is correct again.

Then reduce the exposure time again, and so on.

Once you've reached an exposure time of about 1/40 – 1/80 and the subject lit by the flash is visible in every image, **and the flash is set to the shortest duration (=1/128)**, you've set the perfect exposure for droplet photography.

This setting does not need to be changed even with longer exposure times—keyword: pre-flash—but more on that later.

As the next step, you can set the aperture to approx. f/13–22, allowing you to work in a normally lit room without capturing ambient light. Note: APS-C max f/16 / full-frame max f/22; otherwise, lens blur may occur.

Test: Turn off the flash and take a photo. **The photo should be completely black.**

However, a consistently functioning photo lag is only possible if you operate the camera completely manually. This means manual exposure and no autofocus. Only then is the time between the signal from the hardware and the camera's shutter release always the same. Some cameras also take longer to trigger if the previous image is still displayed on the camera screen.

7.3 Main Flash and V1 / V2:

The main flash duration is the most important factor of all in droplet photography. This is because it determines the actual moment the photo is taken. My camera is set to manual mode.

At an aperture of f/20 and 1/40 sec., I get completely black images in daylight without flashes. This is intentional, because the flash duration is many times shorter and more precise (approx. 1/20,000 s) than the camera shutter. Only through the flash duration can the droplets be "frozen."

The flash output is controlled by the duration. The lower the set output, the shorter the exposure time—on the order of 1/20,000 s at 1/128 flash output.

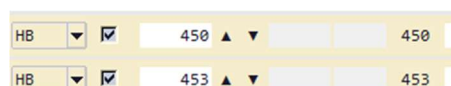
It is essential that your setup always includes a line with a main flash.



Flash lines are always highlighted in yellow so they are easier to spot.

If this is not the case, an error message will appear: "**No main flash set, no drops will be triggered!**" This is because the main flash triggers the camera—simple as that. If you trigger drops after the main flash, they will of course be processed, but they will certainly not make it into the image.

Flash lines can also be set multiple times.



7.4 Double exposures:

It is possible to use 2 additional flashes with separate outputs (VB1 and VB2) on the controller.

This means there are three connections for three flash units with three individually adjustable flash durations. This allows you, for example, to compensate for different sync speeds of various flash units to avoid double exposures.

Of course, you can also connect one flash controller and two individual flashes, or even three flash controllers.

However, **intentional double exposures** are also possible. This means you can pre-flash the droplet shape a few milliseconds before the main flash. You don't need this very often, but it produces some really interesting images.

7.5 Double Exposure Tutorial:

You want to take a picture with two different flash times to capture the droplet process at two different moments simultaneously (as shown on the right). To do this, it's important to understand that such images can only be created by extending the exposure time on the camera.

However, this extension naturally occurs later on the timeline.

Note:

Since the camera trigger is linked to the main flash and hasn't changed, **the main flash now becomes the pre-flash**. The current "pre-flash" thus triggers the camera.

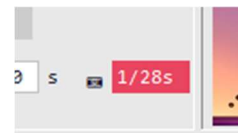
To do this, you must connect your flashes accordingly to the controller (VB1 / VB2).

The VB1 and/or VB2 flashes must then fire after the main flash.



In the image on the right, the blue drop shape is the earlier one, and the purple shape is the later one. To photograph this, the HB flashes first with a blue sheet, followed by V1 with a purple sheet.

The field next to the shutter button shows the approximate exposure time, you would need to set on the camera to get everything in the photo.



Tip:

I recommend always setting the exposure time one stop longer than indicated in the time field.

So: Time field 1/40 = Cam 1/30

8 Loop:

The loop automatically takes a series of photos and works as follows.



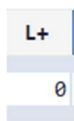
Photos: Enter the number of photos to be taken here.



Wait: Enter the interval between photos here.

The small window next to it counts down the seconds until the next picture.

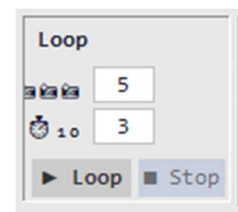
The wait time is intended to allow the water in the tank to settle again.



Start Time L+ This is intended to increment the start time by the entered value for each frame value in ms. These always refer to the start time on the left of the same line.

Both positive and negative values can be entered.

Click on "  Loop to start the process.



The four buttons—Trigger, Play, Photo Setup, and Flash—are disabled during the loop process. However, it is possible to activate additional flashes or adjust start or flash times during the loop. The values will then be used in the next loop frame.

Although the set drop values are changed in the individual rows during the loop, they are reset after the loop ends. The photo log can record all changed values.



Immediately stops the loop. Stop is only active after a start.

LOG file for LOOP

As soon as values are entered in L+, the LOG file displays the start value and the modified (cumulative) value used are displayed in the LOG file.

```
Bild: 103 - 15:45:06
1: Start=100ms → 94ms Oeff=80ms 0µs (Testtext)
2: Start=210ms → 219ms Oeff=30ms 0µs (blablabla)
3: Start=250ms Oeff=20ms 0µs
HB: Start=450ms
VB1: Start=486ms
```


9 Colors and Draining:

A **color** can be assigned to each of the 10 valves.

Simply right-click on one of the color buttons and set the desired color using the standard Windows color dialog.

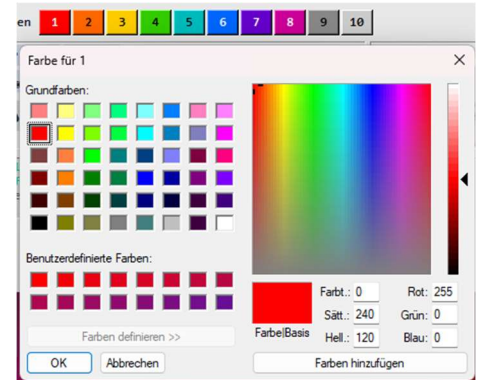
It is recommended to select the color that matches the water in the valve.

To **drain** all the water from a **water tank** or open a valve for an indefinite period, simply **left-click** on the corresponding button. The button will display an icon



and the valve opens. Clicking again closes the valve.

The opening time is a maximum of 60 seconds. The valve then closes automatically to protect the electronics in the controller.



Triggering drainage with external start:

The “Colors and Drain” buttons can also be activated using the **external trigger**.

1. Use the **middle mouse button** (scroll wheel) to select a color button.

An icon will appear.

2. This valve can now be operated using the external trigger.

Press = Valve OPEN / Release = Valve CLOSED.

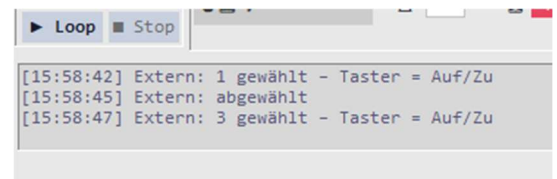
This helps when bleeding the valves from below with a syringe.

It is advantageous to use a foot switch for this. Then both hands remain free.



10 Status / Message Window

Certain status messages are displayed here by the GUI.



11 Photo Setup and Flash



Photo setup:

To set up the flashes or the camera position, you can take a flash photo here without droplets. The three entered flash durations (VB1/VB2/HB) are taken into account.



Photo setup with external trigger:

With a [✓ right] click, the button can be toggled (green)

As long as it is activated, the photo setup can also be triggered with the external trigger.



Flash:

This button triggers all flash outputs simultaneously, regardless of the set times.

This allows you to test the flash function without taking a photo, without a drop, and without a log entry

Experience:

Multiple flashes "in parallel"

- Adapters or splitters can also be built for the flash connections, allowing you to use 5 or 6 flashes simultaneously as the main flash.
- I use a Yongnuo YN560-TX flash controller on the HB port.
This allows me to program three flash groups (e.g., left 1 flash, right 1 flash and rear 4FL). The flash intensity can be easily and centrally adjusted via the controller without having to fiddle with each individual flash).



And here's another free tip: 😊

Never run out of batteries or rechargeable cells in your flashes **again** with these devices: **REVOLT AA Battery Dummy**
Set includes 2 power supplies (3–12 VDC adjustable), 4 power supply cells, and 12 dummy cells.

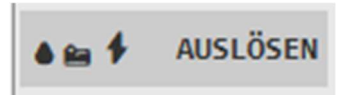
That's enough for 4 strobes (4xAA = 6V) or 2 strobes (6V) and the controller (3V)

Experience:

Power supplies with adjustable voltage perform better than those with only 6VDC. The flashes draw quite a bit of current when turning on. If the power supply drops slightly below 5V during this process, the flash will not fire continuously. Therefore, a setting of approx. 7.5V (with 4x AA) is better. However, this depends on the flashes used; you'll have to test this yourself. I'm not responsible for any damage to your flashes 😊 .

12 Triggering:

The button is locked during the drop sequence.



TRIGGER starts the drop process immediately, which is why a customizable wait time (in ms) can be set before the start. This wait time is intended to allow you to look away from the monitor and focus on the drop process before it begins. The setting is here >> Edit/Options/Start Delay 0 = none, 1000 = 1 sec wait time.

Experience:

It has become clear time and again that triggering directly at the drip frame would be useful. That is why the RED jack was added to the controller. It has the same function as the TRIGGER button. This allows you to align the valve, trigger it with an external pushbutton, view the result on the monitor, correct the alignment, and trigger it again until everything is correct. Then tighten the valve mount.




Or you can use the **motorized valve alignment MMV** [set: MMVC + MMV](#) 🥰 🙌


12.1 Waiting time AFTER the drop has fallen

Are you also an impatient “dripper” 🤪 ?

Do you keep pressing the trigger too quickly before the water has settled?



In the window  s, you can enter a wait time in seconds.

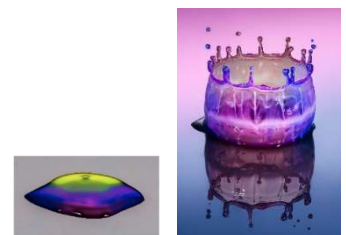
Example:  12 s The process then proceeds as follows:

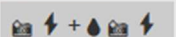
- Trigger
 - The sequence starts, the Trigger button is disabled
 - The sequence is complete; the trigger button remains disabled
 - The number display counts down from 12 to 0
 - The trigger button is unlocked again
- This time setting is not saved in the setup.
- This time setting is ignored when starting a LOOP.


12.2 Photo setup with additional trigger

Something for advanced users

In crown photography, it can be useful to also record the arrangement of the underlying colors. This is the only way to actually assign the resulting crown to a starting point.



With  first, a **photo setup** is triggered, followed by a **normal trigger** with drops. This captures two images, which are also stored in the LOG (if enabled).

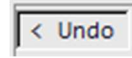
With a [ right] click on this button (the button turns green), the external trigger is activated.

13 Undo / Redo:

If, while wildly adjusting the values, you realize that the setting before the last one better, you can use the **Undo** button to go back up to 5 setting steps. After clicking "Trigger," a complete data set is temporarily saved, but only if any of the values have been changed.



As soon as you trigger the camera again after changing a value, the UNDO button indicates this



So even if you've taken 10 pictures with a given setting, you can click Undo to jump back to the previous setting. (Only for those who can keep track of it all 😊)

Redo can only be clicked if Undo has been used previously.



14 Useful tips:

- Why are **up and down arrows** used on the **start time buttons**?
 - On the one hand, of course, to show where the time is increased or decreased.
 - Another reason, however, is that a falling drop in the image moves upward as you **start time**, or is captured lower and lower the lower the start time is. With the **flashes**, however, it's exactly the opposite: 🤪
Give it a try.
- Start and opening times do not allow decimal numbers. You can enter them, but they will not be taken into account.

Tip:

- It's always quite useful not to set the **start time of the first drop** to 0. I prefer to start it at 100. This gives you some "wiggle room" in case it would be better to start a little earlier. You then only need to decrease the first time and don't have to increase all subsequent ones by the same amount.
- The TRIGGER or LOOP **wait time** should always be set to a sufficient duration. Impatience is absolutely counterproductive here. Even a visually calm water surface can still be churning beneath the surface. The wait time depends heavily on the container used and the amount of water.

15 Change History

❖ TCON16_GUI v1.1 June 9, 2026

Release of the new GUI
Delivery to TR-10 owners

❖