RapidShot®

Troubleshooting Guide

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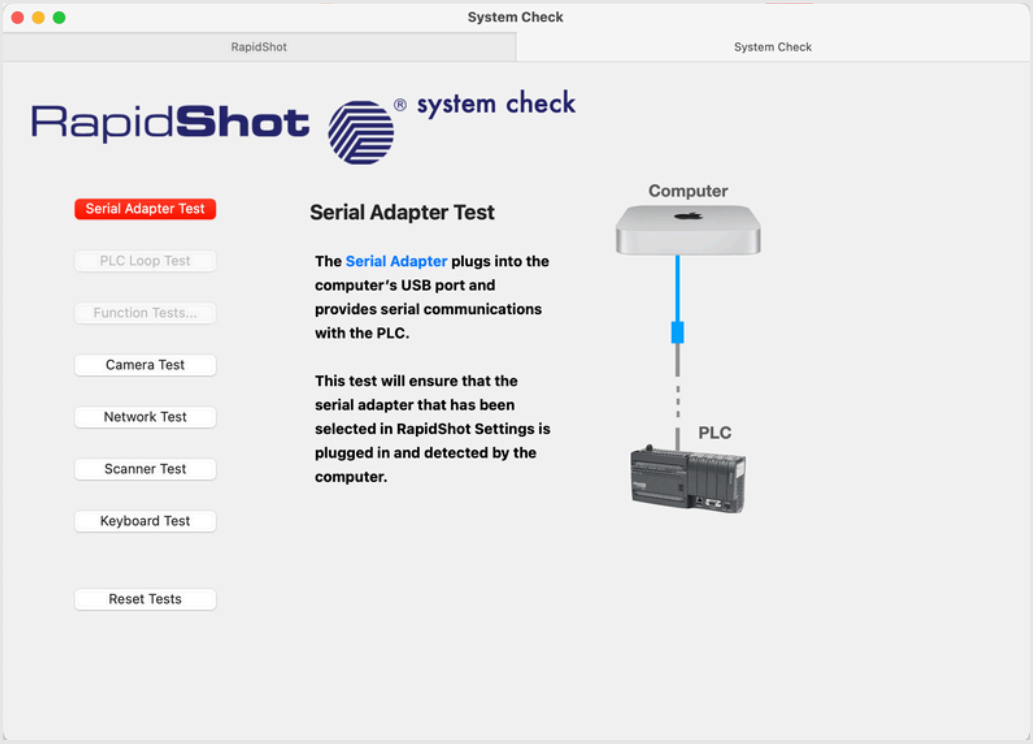
Initial Health Check

This software feature enables operators to do a **step-by-step health check on the Rapidshot System and peripherals.** This is a good first step when troubleshooting the operation of the equipment. It is included in RapidShot software version 97 or higher.

WHAT TO DO:

Click Window > System Check



Click through each item from the top of the screen to the bottom.

If the Icon shows **green**, that is good. It means it's functioning properly.

If the icon shows **red** or gives an error message, it needs attention and is not functioning properly

> **"The puck collection conveyor has stopped!** Please ensure any lodged pucks have been cleared."

This message means the conveyor system detected an irregularity in its operation and the system shut down the power to the conveyor. This is most often caused by a **puck jam: 2 or more pucks have become lodged together in the conveyor track,** although it's possible that there is an alternate issue with the sensor.

WHAT TO DO:

Are there any pucks jammed together in the conveyor track?
Observe the conveyor track along the bottom of the goal, in the corner, up the vertical track and at the top with the curved aluminum "hood". If you see pucks stuck together, manually remove them.

Does the conveyor belt move freely when moved by hand?
Advance the belt manually by pulling down on the belt on backside of the vertical conveyor tower. If the belt moves, the puck jam should be solved and belt is free to move.

Is the reflector and sensor dirty?
Observe the reflector and sensor for the conveyor system. They are on the top of the vertical conveyor column. The reflector is mounted on the black flywheel and the sensor is installed in the wood opposite it. Clean them with a towel.

Does the conveyor run smoothly when in operation?
The conveyor belt should run freely without disruption. The sensor will send a signal to the PLC every 1 second as the reflector on the flywheel goes round and round. A red LED on the PLC will flicker every time the sensor passes. If this is disrupted (by pucks, dirt, or other mechanical issue) this issue will reoccur.

ADDITIONAL VIDEOS

"**PLC communication failed** – Resolve before attempting to shoot."

This message means that the **computer is not communicating with the PLC**. The PLC is the Programmable Logic Controller labeled "Direct Logic 06". It is the housed in the upper most electronics box in the mechanical room.

WHAT TO DO:

Is the PLC Powered on?
Enter the mechanical room. Check that the PLC is powered on by looking at the top electronics box with the "Direct Logic 06" module. In the top right corner, you should see "PWR" and "RUN" illuminated. If not, there is no power to the PLC.

Are the E-stop buttons pressed?
If the PLC is off, the most likely case is an E-Stop button has been pressed. Check both buttons and twist to unlock. You should visually observe the PWR and RUN lights illuminate on the PLC if power is restored.

Is the power switch turned off or breaker popped?
Check the light switch on the left side of the PLC box. Flip it to the ON position if turned off. Secondarily, check the breaker to the left of the PLC. It should be activated and show a red flag. If it's green, it's popped. Flip it back on.

Has the cabling been disconnected or damaged"?
If the power is on on the PLC but the communication is still not occurring, check the cabling that runs from the computer to the PLC. It's possible it came unplugged or got damaged.

ADDITIONAL VIDEOS

"**Warning: PLC not detected** - Defaulting to simulator mode."

This message means that **the computer is not seeing the adapter for the PLC communication**. The adapter is a USB to RS232 cable that plugs into the back of the computer and resides in the rear shelf. It is generally black or grey colored and plugs into a USB-C port via a small adapter (as of 2025).

WHAT TO DO:

Is the adapter plugged in?

Open the rear shelf. Identify the computer. Observe the peripherals that are plugged into the computer. Identify which is the adapter that converts the USB to RS232. Verify that it is plugged in to the USB port.

Unplug and re-plug the adapter

Pull the adapter from the USB port at the back of the computer. Wait 2 seconds, then plug it back in. Most often, this re-instates the communication.

Confirm it's plugged directly into the back of the computer

The communication through that cable to the PLC is most reliable when the connection is made directly into the back of the computer, and not through a dongle or USB hub.

Quit and re-open the RapidShot software

Once the cable has been re-inserted into the computer, the communication is usually restored. Restarting the RapidShot software will enable the user to start the experience again. If this is unsuccessful, reboot the computer.

ADDITIONAL VIDEOS

"Series startup error - **Failed to start cameras.**"

This message means the **cameras are not operating correctly and will not work with the RapidShot software.** The cameras are connected to the Mac Mini computer in the rear shelf via USB cables. This is most often an issue with a loose cable or connection.

WHAT TO DO:

Restart the RapidShot Software
Before doing in-depth troubleshooting, close and reopen the RapidShot Software to see if it re-establishes connection to the cameras. If not and the the issue re-occurs, continue with the steps below

Are the LEDs on the cameras illuminated?
Get a step ladder and observe the camera units themselves. On the back side where the cables are inserted, a green LED should be illuminated on each camera (2). This indicates they are connected to the computer.

Disconnect and re-connect the cables at each junction
Track the cabling from the cameras to the computer. Is everything securely connected? There should be no loose connections or 90+ degree bends. Carefully unscrew/unplug the cables, wait 2 seconds, and reconnect them at all connection points. The cables that go into the computer are the two USB-A cables side-by-side at the end of the USB bus.

Are the cameras capturing images correctly in Pylon Viewer software? (advanced)
Open Pylon Viewer software in the Applications folder. Both cameras should be listed in the upper left corner. Open a live connection to each one, and observe the image capture. It should show a large number of images with no errors.

ADDITIONAL VIDEOS

"Warning - **No Internet access** - Check network and try again."

This message means **the computer is not connected to the internet** and cannot connect with the RapidShot Database. An active internet connection is required for the system to run.

WHAT TO DO:

Can you surf the web?
Open a web browser, like Safari, which should be located in the bottom dock. It can also be contained within the "Applications" folder. With the browser open, try to navigate to different pages to ensure the internet is connected.

Is the WiFi network selected?
Click on the WiFi link in the top right corner of the computer monitor and verify that the computer is connected to a network. Turn off then turn back on the WiFi to reinstate the connection.

Is the computer connected via Ethernet?
Some locations have hard-wired the internet connection via an ethernet cable. Navigate to System Settings > Network and verify that the ethernet connection is active.

Close and reopen RapidShot software
Once the internet has been re-connected, re-launch the RapidShot software and try to initiate a series again.

ADDITIONAL VIDEOS

"Authorization Attempt Failed - **Member ID is already in use.**"

This message means **the member that is attempting to scan in already has an active session.** This can result from scanning in on multiple pieces of RapidShot equipment (AKA RapidHands and RapidShot), OR it can result if the software crashed or was not closed properly during the last session.

WHAT TO DO:

Can you scan out of other devices?
If the ID is already scanned and in operation on another device, the session must be closed there before starting a new session. Complete the round and scan out of the existing device before starting a new session.

Can you scan an alternate member ID?
Try to scan a different card or member app (we recommend a generic "Staff" account, if available). If it successfully starts the system, it is clearly an issue with that one particular member ID.

Can you complete the training session on a generic "staff" card?
In the event the software was improperly closed and the prior session for that athlete was left "hanging", the best solution is to let them complete the training sessions on a generic card. The hanging session will reset at midnight and their account will naturally be ready to use the next day.

Contact RapidShot for further resolution
The team at RapidShot can manually cancel a "hanging" session in the back end on a one-off basis. Please call or email at the contact info below.

ADDITIONAL VIDEOS

"Authorization Attempt Failed - **Time account has run out.**"

This message means **the account has run out of time.** Additional minutes must be added to their Member ID through the RapidShot Operators "Center Site" in order for the athlete to continue training.

WHAT TO DO:

Identify the member ID
Each athlete has their own 8 digit member ID. This is available in the mobile app under the "Profile" page. It is also printed on the athlete's membership card (if applicable)

Log into the center site (https://center.rapidshot.com)
The operator must log into their center site instance with their username and password.

Search for the member ID
Use the search fields at the top of the page to find the member ID that has run out of time.

"Add RS Minutes" and Save
Click on the arrow to the left of the member's name and enter the desired number of minutes into the "Add RS Minutes" field then click "Save". This should add time to the athlete's account. It should update instantly so they can scan and start training right away.

ADDITIONAL VIDEOS

"Authorization Attempt Failed - **Resource not found.**"

This message means **the athlete is not found in the database for that location.** it is possible they registered, but did not join the particular location where they are trying to train.

WHAT TO DO:

Open the RapidShot Members App

Click the "Locations" icon in the bottom menu

Search for the location

Click "join location"
The athlete should see a notification that indicates they've joined the location. Note: TIME WILL HAVE TO BE ADDED TO THE MEMBER ACCOUNT prior to training. See the troubleshooting step "Authorization Attempt Failed - Time account has run out."

ADDITIONAL VIDEOS

Issue: **Passing tires are not spinning**

The passing tires are powered by 220V through the motor controller in the lowest electronics box. The motor controller is programmed with various pass speeds and the signal is sent from the PLC for it to run. In addition, **the maintenance door must be closed and locked so the and the safety switch (mounted on the door frame) is fully pressed.** If this safety switch is not pressed, the tires will not spin and no pucks will come out.

WHAT TO DO:

Is the maintenance door fully closed and locked?
This is necessary to fully depress the safety switch on the door frame. You should feel the button press and hear the motor start when the door is closed while the machine is in operation.

Is the motor controller set to the correct settings?
The motor controller (lowest electronics box) should read 0.0hz, Rem, and FWD when idle.

Does the motor controller show a Hz reading when the safety switch is pressed?
When the machine is in operation, and the safety switch button is pressed, the motor controller should display the intended speed on the LCD screen (e.g. 29Hz for a 20mph pass speed).

Are the cables plugged in?
The motor should connect to the motor controller via a grey power cable and quick connect clip. The motor controller should connect to the PLC via a cable and green phoenix connector, and it should all be powered by 220V through the E-Stop box and to the wall.

ADDITIONAL VIDEOS

Issue: **No pucks are being passed**

The passing system requires pucks to be loaded properly in the spiral, the puck dropping disc (the "Parser") to be powered and activated by the PLC, and the passing tires to be spinning.

WHAT TO DO:

Are there pucks in the spiral ready to be dropped?
Enter the mechanical room and visually observe the puck spiral. Are the pucks loaded and freely reaching the bottom of the spiral with no obstructions? Is the "next puck" ready to be dropped by the black puck dropping disc (the "parser")?

Is the aluminum downslope free of obstructions after the puck dropping disc ?
Check that the track from the parser disc to the passing tires is clear with no lips or obstructions. Remove any pucks that have piled up between the parser and passing tires. If pucks have piled up, It's likely the door wasn't closed properly, the tires weren't spinning, and the pucks didn't clear the passer.

Is the maintenance door closed & safety switch depressed when in operation?
The maintenance door must be closed & locked so the safety switch (mounted on the doorframe) is fully depressed when in operation. If not, the pucks will be dropped but not shoot through the tires. It's possible the lock needs to be tightened to fully depress the switch.

Is the puck dropping parser plugged in and powered?
Check the small motor that powers the puck dropping parser disc. On the backside there are two power cables. They should be attached and well seated on the motor clips.

ADDITIONAL VIDEOS

Issue: **Multiple Pucks are being passed**

The puck dropping mechanism relies on a sensor to start/stop the puck dropping wheel. This sensor notifies the PLC when a puck has been dropped. If it is dirty or unplugged, it will not function properly.

WHAT TO DO:

Is the sensor on the aluminum downslope clean?
Take a soft towel and wipe down the surface of the exposed sensor so there is no dust or debris on it. Move your hand (or a puck past it) back and fourth. You should see the back half of the sensor illuminate as it goes past.

Is there an extra puck sitting down by the passing tires?
Sometimes an extra puck sits there and gets pushed through, creating a "double pass". Ensure the downslope to the tires is free and clear with no pucks lingering there.

Is the puck dropping "parser" disc loose or over rotating?
Observe how the disc starts and stops. If it is trying to stop but over-rotating and occasionally dropping a second puck, increase tension on the belt between the disc and motor. If it doesn't help, consider replacing the parser motor.

Are the pucks chipped or damaged?
If the pucks themselves are damaged (and not the accurate shape, it's possible they can slip through the puck dropping mechanism. Replace damaged or deformed pucks.

ADDITIONAL VIDEOS

Issue: **Goal light(s) not illuminating**

There are four (4) goal lights wired in sets of two: right side and left side of the net. The lights themselves are LED and pressure fit into the light housing what's welded on the side of the goal. There is a bolt that secures them in place. The primary wiring connection is inside the housing. From there, the wires run down the inside of the goal frame and through the conveyor box to a green connector on the backside of the conveyor box.

WHAT TO DO:

Is it just one light?
Shoot a series of pucks and make note of which light is not illuminating. Utilize one of the practice modes (upper corners or bottom corners) to hone in on exactly which light is not working.

If it's multiple lights, are they both on the same side (R or L)?
If you determine that there is more than one light not working, check to see if they are both on one side of the goal. It's possible that side has become disconnected behind the conveyor box. Check these connections

Can you turn the light(s) on using the "System Check" feature?
Open the Window > System Check feature and proceed to the functional tests section. From here you should be able to illuminate one light at a time to confirm which is not working.

Rewire and/or replace.
Unscrew the bolt that holds the light into the housing and pop the light out of the front. Check the wires to see if anything is loose or disconnected. If so, insert the wires and screw them back in and re-test. If the light needs to be replaced, connect the new wires and slide the light into the housing with the associated foam backing and replace the bolt.

ADDITIONAL VIDEOS

Issue: **Shots not being tracked**

The high speed cameras mounted overhead view downward and towards the shooter. They capture hundreds of frames per second as the puck is shot towards the goal. Accurate lighting is required, and there must not be any obstructions in the field of view for accurate tracking.

WHAT TO DO:

Is the athlete standing in the correct spot?
The athlete must be standing at the back of the lane, no closer than 4' from the back wall. If they are too close to the net, the camera will pick up their body and/or hockey stick and will not be able to track the shot. When in doubt, move back.

Is the overhead lighting on and is the room bright enough?
The system works best when the overhead LED shop light is illuminated and there is sufficient light on the lane. If it is not bright enough, the camera will not be able to clearly see the pucks.

Is there any direct sunlight shining on the floor?
Direct sunlight from windows can disrupt the camera tracking ability. Make sure to block out any windows with curtains or other blackout options to avoid direct sun.

Has the camera been hit by a puck or gone out of focus?
If the camera is not focused properly, it will not track pucks well. Generally, the focus is locked by a set screw on the lens housing, which is part of the set up and calibration of the equipment. If it has been knocked out of focus for any reason, this will have to be dialed back in using the Pylon viewer application.

ADDITIONAL VIDEOS

Issue: **Shot tracking not accurate**

The camera system plots the trajectory of the shot based on the images captured and maps it to the net. It's essential that the net and target graphic be in the correct location relative to the cameras and that there are no other adjustments impacting their relative location. The camera system is 95%+ accurate, but there is some variability based on player shooting ability. AKA a weak end-over-end shot is harder to plot than a crisp, accurate one.

WHAT TO DO:

Is the target graphic hung properly?
The top edge of the blue targets in the top corners should be aligned flush with the underside of the red cross bar of the goal. If not, use the net hanging carabiners to increase or decrease the height of the target relative to the goal.

Is the athlete standing in the correct spot?
If the athlete is too close to the goal, their follow through could disrupt the accuracy. Have them take a step back.

Is the lighting sufficient?
The system works best when the overhead LED shop light is illuminated and there is sufficient light on the lane. If it is not bright enough, the camera will not be able to clearly see the pucks.

Is anyone leaning on the glass or moving the lane structure?
We have seen this happen when there is a lineup of people pressing against the glass. If the RapidShot aluminum frame is moving while shots are taking place, it can result in variability when plotting shots. Encourage the guests who are watching to take a step back and not bang on/lean on the glass.

ADDITIONAL VIDEOS

Questions?

Contact RapidShot
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