

Racegun Interface Program -RIP

This section covers installation and use of the PC-software for the Racegun grip.

This guide is for the RIP version 1.X – please visit www.raceguns.dk for an update if you are running an earlier version.

General description

Your Racegun Computer Grip can be connected to any PC using the Racegun Interface Cable and the RIP software. The plug for the interface is the same as used by the charger. The Racegun Interface Program allows a multitude of tasks to be performed some of which are:

- Set all timings and other tuning parameters of your gun
- Control the built in game timer
- Download and upload settings to the grip
- Download statistics from the shot counters
- Upload new firmware versions
- Set the mode of the gun
- Control the anti chop eye

Installation

Download the latest Full version from www.raceguns.dk. Unzip the zip file to a convenient directory on your hard drive and run the setup.exe file by double clicking it. The installation begins and you should complete all steps by following the instructions on your screen.

Compatibility

R.I.P. is tested with Windows 98, Me, NT4, 2000 Pro and XP.

Previous installations

If you are installing a later version on top of an older one, you should uninstall the previous version first.

Upgrading

Software installation kits are usually available as Upgrade Only, containing only the changed files, making for a much smaller download. These upgrades should of course be installed on top of the old version.

Basic functionality

Main Window

The main window has 5 sections: Timing, Battery, Game Timer, Counters and Options

Timing

This section contains sliding bars for setting the 5 timing values of a firing cycle, together with the Firing Mode.

Firing Mode

The drop down box in the top allows you to set the firing mode of the gun the following modes are available:

Classic mode

One pull of the trigger will release one shot. If you pull the trigger again before the shot is fired, the trigger pull will be ignored. If you hold the trigger, the bolt will stay in the open position.

Semi-Auto mode

One pull of the trigger will release one shot. If you pull the trigger again before the shot is fired, the trigger pull will be ignored.

Sniper mode

One pull of the trigger will release one shot. The marker will not reload before the trigger is released. If you pull the trigger again before the cycle is complete, the trigger pull will be ignored.

Full Auto mode

As long as you pull the trigger and hold it, the computer will fire the marker at the defined rate of fire (ROF).

Sliders

Shot: the time the sear solenoid is activated.

Dwell: the time the bolt waits from trigger pull until it starts to open

Open: the estimated time the bolt takes to move back

Load: the time the bolt waits for the ball to drop

Close: the estimated time the bolt takes to move forward

Expert Mode

Normally only Load is changeable, but selecting the Expert Mode tick box gives access to all of the timing settings.

Close=Open

Selecting the Close=Open tick box makes the Close time = the Open time.

Battery

This panel indicates the voltage left in the battery – your battery voltage should always be in the green area. If the battery indicator shows a low battery voltage, please charge your grip.

Game Timer

The grip has a countdown game timer with alarm and a 60 second prewarning alert. This means that you can set the timer to 10 minutes, with a 60 second pre-alert – they grip will then beep after 9 minutes and the again when then again when the full 10 minutes has expired.

You set the desired game length (count down time) by using the small up and down arrows next to the box labeled Counting Down From – minimum time is 1 minute maximum time is 99 minutes.

To enable the 60 second prewarning select the tick box Sound alert 60 sec. Before game end.

Counters

The grip has 3 shot counters: two user controllable and one total counter. When you press “Reset” next to a counter, the counter in the connected grip is immediately reset. The total counter shows the total number of cycles the grip has done since the factory reset.

Options

Under Options you can control the advanced features of the Racegun grip.

A.C.E. Mounted

This tick box must be enabled when the gun is equipped with an anti chop eye (ACE).

Use A.C.E.

Enabling this tick box turns the anti chop eye of the gun on

CTO Adjust

Enabling this tick box allows the anti chop eye to shorten the length of the Open time – meaning if the anti chop eye sees that the breech is cleared before the end of the Open time – the remaining Open time will be cancelled. This will allow the grip to potentially fire at a higher rate of fire than what is set by the parameters of the grip.

Eye Check Max.

Enabling this tick box makes the anti chop eye wait for a given amount of time (specified in milliseconds in the adjacent box) for a ball to drop into the breech. If no ball is detected and the time expires the breech will close anyway – allowing the gun to be fired. This option is very useful in case of a malfunction of the anti chop eye.

Eye OK Max.

Enabling this tick box makes the anti chop eye wait for a given amount of time (specified in milliseconds in the adjacent box) for a flash of light between the sensor and emitter. If the flash of light is not detected and the time expires the loading operation will finish anyway – allowing the gun to be fired. This option is very useful if the anti chop eye gets dirty or in case of a malfunction of the anti chop eye.

Default Loadtime

The Load time used when the anti chop eye is disabled on a gun with an eye installed. This time is only used when the anti chop eye is disabled and it overrides the load time set by the slider in the timing panel.

Use Triggerfilter

Enable anti bounce software triggerfilter to reduce trigger bounce

Use LED

Flashes a red LED on the circuit board every time the trigger is pulled (only supported in Classic mode)

Use Feeder

Turns on the feeder signal from the board – allows you to run a Warpfeed or other types of loading devices using the Racegun grip to control the device.

Buttons on the right hand side of the window

Get

Click Get button. Retrieves current Timing set-up, Game Timer set-up and counters from grip.

Put Settings

Click Put button. Saves the current timing, game timer settings etc. from the PC into the grip.

Library (settings)

R.I.P. contains a library for storing different timing settings together with information on how the gun was configured, weather conditions etc. Click the Library button or access through the menu Function, Library templates. A Racegun Library window pops up with your current settings highlighted.

Properties

Highlight the library record you wish to access or stay on your current, click the Properties button. A pop up appears with two pages. The first page lets you name and date the record and displays summary info on the timing. The second page contains user variables like Barrel, Paint, Temperature etc. but you can add as many as you like. To store a text in one of the variables, highlight it, click Edit and enter the value you want.

Also accessed by clicking the Properties button on the main window.

Delete

Deletes the highlighted record permanently.

Use

Takes the settings in the highlighted record and transfers them to the main window for either Putting to grip or further editing. You can also use a record in the Library window by double clicking it.

Close

Closes the Library window, saving the changes you might have made, but without transferring anything to the main window. In other words if you have browsed around in a record or two, entering or viewing information, you will not change any values in the main window by leaving the Library window with Close.

Properties

Click the Properties button and a popup appears with two pages. The first page lets you name and date the record and displays summary info on the timing. The second page contains user variables like Barrel, Paint, Temperature etc. but you can add as many as you like. To store a text in one of the variables, highlight it, click Edit and enter the value you want.

Default settings

Returns all settings in the RIP software to the factory default values

Toolbar menu

New (dataset)

Press menu function file, new to set all settings to default and start a new set of parameters which can be saved in the library

Save (dataset)

Press menu function file, save to save the current dataset in the library

Exit

Press menu function file, exit to close the RIP program

Get Gun Information

Accessed through menu Function, Get, Gun Information. Retrieves grip serial number and build versions for firmware, boot code, comms protocol and hardware. Use this information when you contact support or to verify what firmware you have before installing new versions.

Get Battery info

Accessed through menu Function, Get, Battery Info. Retrieves battery condition in volts. Use this to determine whether you need a recharge or not.

Get Firmware Program

Accessed through menu Function, Get, Firmware Program. Retrieves the current firmware program from your grip and writes it to a file on your PC. Use only to make a backup of your current firmware.

Put Firmware Program

Accessed through menu Function, Put, Firmware Program. Allows you to burn new firmware into the grip. Download the desired firmware version from our website www.raceguns.dk and save it to a convenient directory on your hard drive. Firmware files have the extension “.rgf”. Select menu Function, Put, Firmware Program and browse to the directory where you saved your download. Highlight the RGF-file and click Open. The firmware will now be burned to your grip, indicated by the status bar in the bottom of the RIP window and by the LED on the grip flashing red/green/yellow. Do nothing on your PC or grip until a window appears, confirming that the burning is complete. *Note make sure your grip is fully charged before putting new firmware to the grip.

Settings Library

R.I.P. contains a library for storing different timing settings together with information on how the gun was configured, weather conditions etc. Click the Library button or access through the menu Function, Library templates. A Racegun Library window pops up with your current settings highlighted.

Properties

Highlight the library record you wish to access or stay on your current, click the Properties button. A pop up appears with two pages. The first page lets you name and date the record and displays summary info on the timing. The second page contains user variables like Barrel, Paint, Temperature etc. but you can add as many as you like. To store a text in one of the variables, highlight it, click Edit and enter the value you want.

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Options

The options menu item is accessed through menu Function, Options and has two pages.

Database

Here you can select what database you want to use for all your settings, library etc. Default is RIP.mdb, which is included in the normal installation.

Communication

Here you can select what COM port you use for your serial cable connection to the grip. Default is COM1. The remaining communications settings should not be changed.

Setting up your grip

Grip without the ACE (anti chop eye)

First of all start by writing down the current working settings of your grip – If the grip is brand new the settings are most likely the factory default.

-Start by setting you Shot time – the default time of 10 mS works with just about any gun out there – if you want to tune this setting try to lower it to 8 or even 6 mS and check if you grip still works.

Lowering your Shot time will save some battery but the effect on the rate of fire (ROF) is very limited.

-Then set your Dwell time – setting the Dwell time shorter than the Shot time does not have any effect – normally the Dwell time is equal to the Shot time but in guns showing blowback it might be useful to increase the Dwell time until the blowback goes away. If the Dwell time needs to be more than 10-12 mS to remove the blowback it might be worth while to change the valve spring of the gun (harder).

-To set the optimal Open time you need to first set the grip in Semi auto mode, the Open time to 15 mS and the Load time to 1 mS (make sure your low pressure regulator is set correctly). Now try firing the gun - if it does not cock correctly increase the open time (1 or 2 mS) and try again – keep trying (firing/increasing the Open time) until the gun cocks reliably.

To be on the safe side we recommend that you add 2 mS to the optimal timing.

-To set the Load time you need to know how fast your loader is capable of feeding a ball. Most loaders can feed the gun reliably with a Load time of 35mS (some loaders might be a bit slower though) but if you got a high-end loader like the Halo or a Warpfeed you will be able to lower you Load time significantly. The only way of optimizing this is to lower the Load time and then go to the firing range and shoot a hopper of paint. If the gun does not chop you can lower your Load time and go test it again – keep lowering the Load time until

the gun starts to chop. Please note that if you change the loader or you batteries in the loader runs out you might start chopping.

-Setting the Close time is very easy you can either set the Tick box Close=Open which makes sure the settings are equal or if you are really into fine tuning you can set the Close time to be 2-3 mS less than the Open time. If you get blowback you might need to increase the Close time slightly.

Make sure you select the tick box Use trigger filter to enable bounce filtering

Set the desired mode of fire – some people like Semi but most cocker users prefer Classic mode!

Grip with ACE (anti chop eye)

Start by setting your gun up as it was a gun without the ACE mounted –make sure that the eye works according to the EYE installation guide.

There is basically two ways (recommended) you can have the gun operate with the EYE installed.

1. Set the Load time to 1mS and tick the following boxes ACE mounted, Use ACE, CTO adjust, default Load time 45 mS – this will make the back block/bolt stay in the open position if the gun is dry fired (or if you run out of paint) – if you drop a ball in the chamber the backblock will move forward and the gun is ready to fire.

*Note do not try to change the setting via the RIP with the back block/bolt in the open position – this will hang the grip and you will have to disconnect the battery to reset it! If you use these settings you will have to disable the EYE in case of a malfunction by pressing and holding the ▲ and ▼ buttons simultaneously until the grip beeps (only possible when the back block/bolt is in the closed position).

2. Set the Load time to 1mS and tick the following boxes ACE mounted, Use ACE, CTO adjust, EYE check Max. 100mS, EYE OK. Max. 100 mS, default Load time 45 mS – this will make the gun cycle even without paint in it - it will cycle at a reduced rate of fire due to the 100mS waiting time inserted by the EYE Check Max.

This will allow the gun to fire if the wires to the EYE breaks, the EYE gets dirty, if by any chance one of the LED's falls out or if you are out of paint etc.