SIMAGIC
DYNAMIC
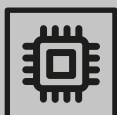
Stepper Base **M10**

TECHNICAL CHARACTERISTICS

Three CPUs are incharge of motor control, game effects, and USB real-time communication respectively. They enable the whole system to make force-feedback faster and more complete .Let driver feel the status of the vehicle accurately.

The control frequency of force feedback is 40,000 times per second, not missing every minute detail.

The resolution of encoder is 16384 per turn.it is more accurate and smoother.
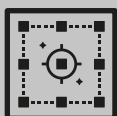
The newly designed three-phase hybrid stepping motor is smoother and faster than the traditional stepping motor. The maximum torque can be up to 10nm, which is enough to simulate the torque of most real cars.
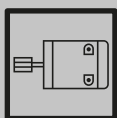
Direct drive enables a more direct driving experience with the steering wheel directly connected to the motor shaft, and with no belts or gears.
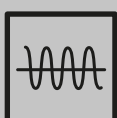
The real-time game data interaction has a frequency of 1000 Hz per second.

It enjoys a new control software which has abundant functions and is easy to adjust. One can adjust and have different steering feelings based on his or her needs.

The new setting of the drift mode, and the perfect balance between the strength and the speed of turning the steering wheel, bringing a completely new drift experience.

There are a variety of peripheral expansions.

To get the most out of your Stepper Base M10, please read this manual before use. It contains important health and safety information and should be retained for future reference.

INDEX

⚠ ATTENTION

The device must not be exposed to rain or humidity in order to avoid risk of fire and/or electric shock.

• Operating room temperature: 59°F - 95°F

• The recommended operation time of the wheel with continuous force feedback activity is 1 hour.

• Excessive use may cause health risks. We recommend to take a break of 5 minutes every 20 minutes, and do not drive for more than 2 hours per day.

• Not intended for children under the age of 13 years old. Contains small pieces which pose a choking hazard!

• Do not open the casing of the device.

• This device contains components that cannot be repaired by the user, opening will void the warranty.

⚠ WARNING! Electrical Safety

• The Stepper Base M10 must be connected to an appropriate power source:

• Always connect the DC side of the power supply to the wheel base before connecting the AC side of the power supply to your wall socket.

• Use only the power supply and power cord that came with your Stepper Base M10. Replacements may only be issued from an authorised repair centre.

• Do not use non-standard power sources, such as generators or inverters, even if the voltage and frequency appear acceptable. Only use AC power provided by a standard wall outlet.

• To avoid damage, do not expose your Stepper Base M10 to sources of heat.

• When connecting and / or disconnecting any steering wheel to / from Stepper Base M10 take care of the pins inside the Quick Release.

• Unplug the power cord of your Stepper Base M10 during storms or when unused for long periods of time.

• If the Stepper Base M10 becomes damaged in any way, stop using it immediately and contact Simagic Customer Support http://www.simagic.com

📄 GENERAL NOTES

Stepper Base M10 is fully usable out-of-box. We always recommend updating to the latest firmware. See chapter 'Firmware and driver update' for more details. A PC is required to update your firmware.

• All specifications in this document are subject to change. The Stepper Base M10 firmware and/or PC driver may be updated to implement new features or general improvements.

• This product contains the all other Simagic steering wheels which might be mentioned in this manual are not included within the Stepper Base M10 package and sold separately. You can obtain them from the Simagic webshop: www.simagic.com

• This manual discusses assembly, connections, and functions related to Simagic steering wheels and other additional devices. This is not a replacement manual for the other corresponding products! Read the quick guides or user manuals for the other products as well!

• The warranty does not include defects that are due to commercial use of the product. See chapter "Warranty" at the end of this user manual as well as the Terms & Conditions at www.simagic.com for more details.

Thank you for purchasing the Stepper Base M10. This product contains many advanced technologies, including a custom outrunner servo motor, integrated electronics, and wireless Quick Release system. Built from the ground up for sim racing, the motor delivers 10Nm peak torque, with outstanding wheel speed and acceleration. Welcome to the Direct Drive Revolution.

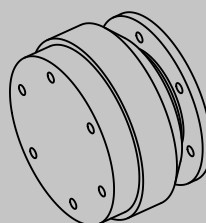The Stepper Base M10 is compatible with the PC.

IMPORTANT: Stepper Base M10 is fully usable out-of-box.
We always recommend updating to the latest firmware. A PC is required to update your firmware.
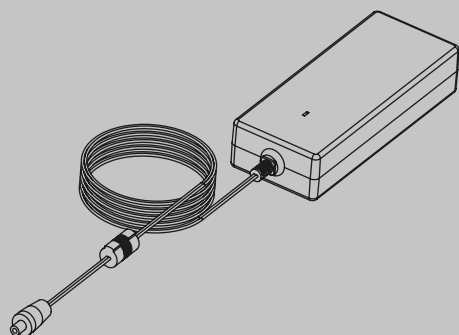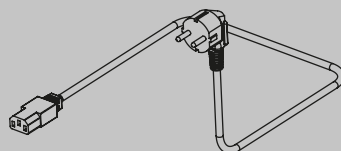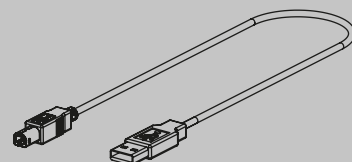
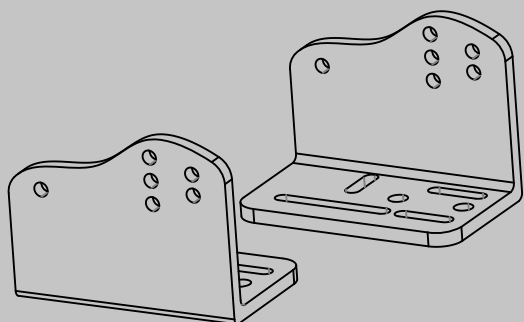## PACKAGE CONTENTS
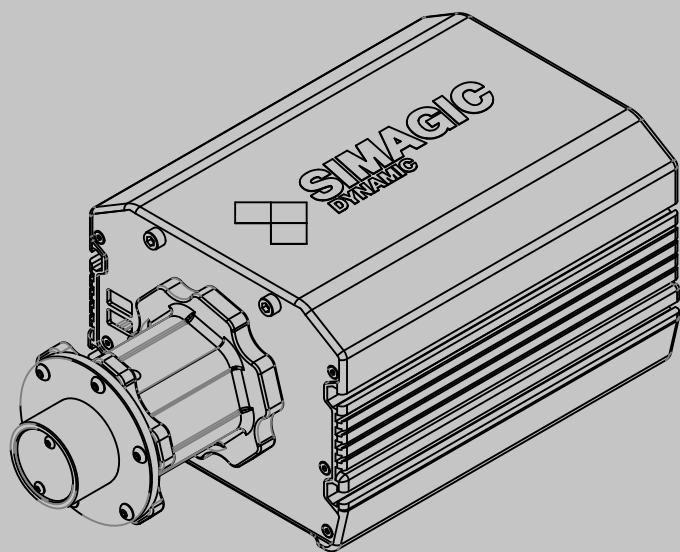
Stepper Base M10

D1 QR Simagic

Power supply unit
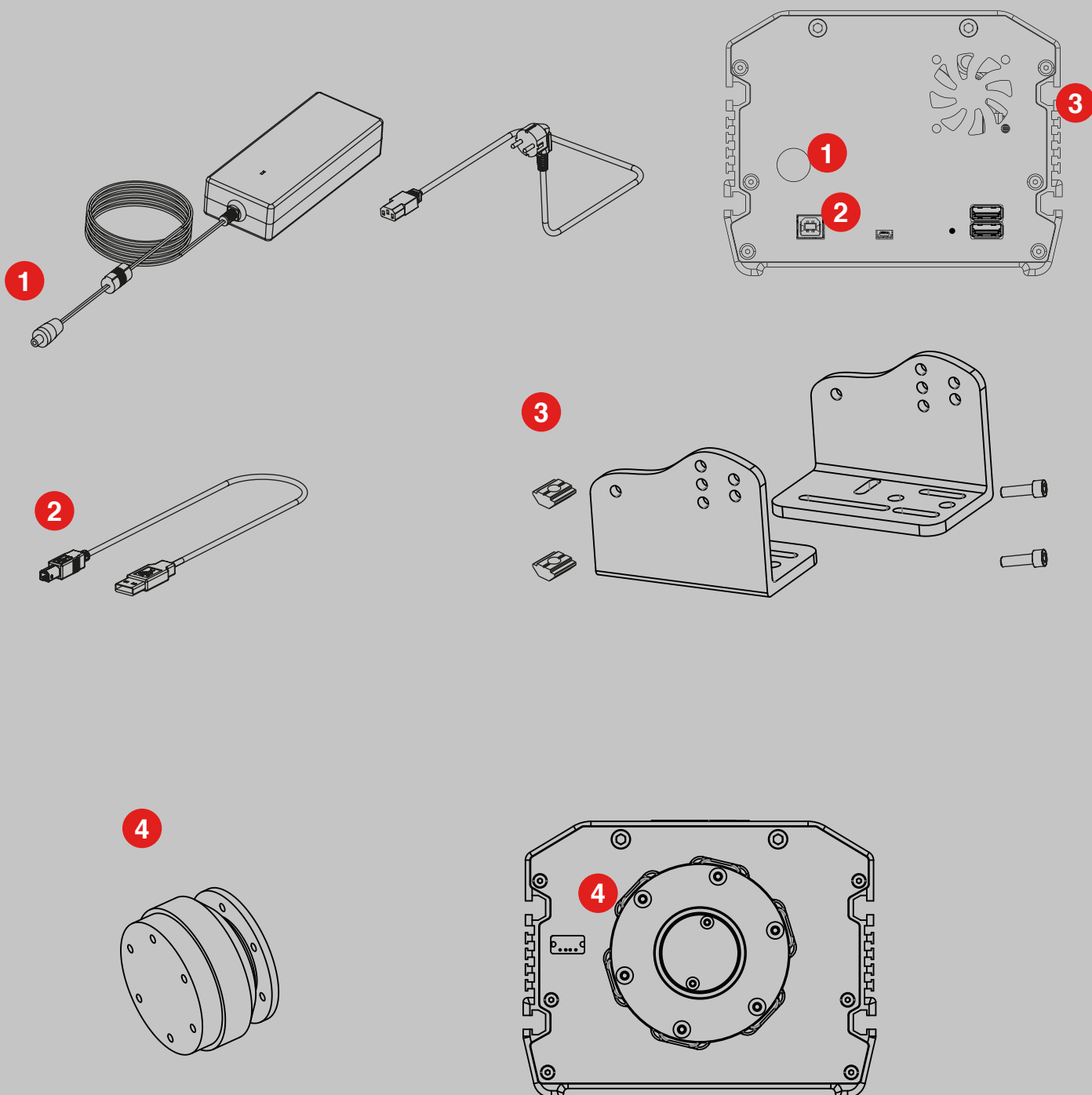
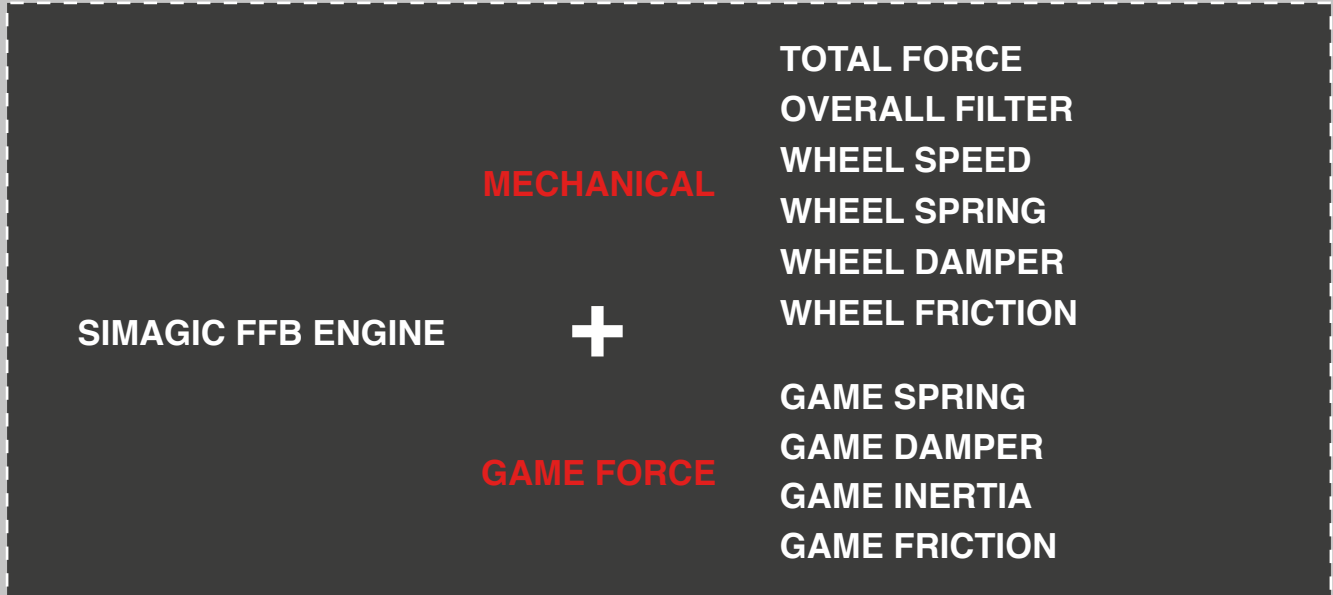Power supply cable

USB connection cable

Mounting Brackets

Screw

T-Nut

ASSEMBLY

SETTING

The force engine of SIMAGIC is the combination of mechanical force and game force.

SIMAGIC FFB ENGINE **+**

MECHANICAL

GAME FORCE

TOTAL FORCE
OVERALL FILTER
WHEEL SPEED
WHEEL SPRING
WHEEL DAMPER
WHEEL FRICTION

GAME SPRING
GAME DAMPER
GAME INERTIA
GAME FRICTION

MECHANICAL FORCE: To enrich the handle of the game, which works while whether the game is played or not.

TOTAL FORCE: To adjust the output range of the Force engine. The positive or negative signs represent the direction of the Force.

OVERALL FILTER: To adjust the smoothness of the output of force engine. The higher the value, the smoother the output, the lower the resonance frequency, and the less the details.

WHEEL SPEED: To adjust the highest speed of the wheel. The value on screen represents the highest speed. SIMAGIC algorithm does not intervene if the speed is below this value; Otherwise the algorithm will limit the speed to set value.

WHEEL SPRING: To adjust the central spring of the wheel. The larger the offset from the center, the greater the spring.

WHEEL DAMPER: To adjust the mechanical damper of the wheel. The damper force hinders the wheel rotation. Damper force= wheel speed * mechanical damper coefficient.

WHEEL FRICTION: To adjust the mechanical friction of the wheel. The direction of friction is opposite to that of wheel rotation. The value of friction can be adjusted by friction coefficient.

SPRING FORCE
LEFT LIMIT   CENTER   RIGHT LIMIT

DAMPER FORCE
SPEED OF WHEEL

FRICTION FORCE
SPEED OF WHEEL
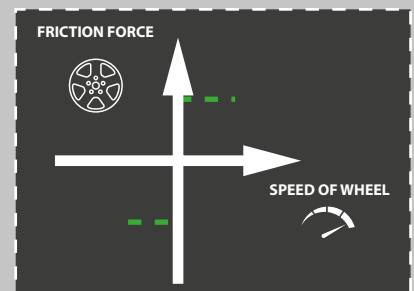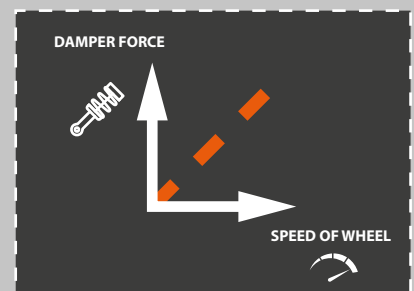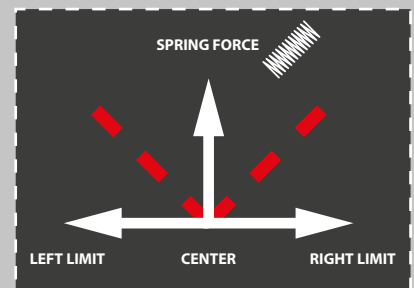
SETTING

SIMAGIC supports six types of game force, and game may not use all types. At the beginning of the game, the type that is chosen will turn red. Users can adjust the type of game force.
The default value of game force is 100, which is the original output of the game. Users can get a good handle by adjusting the mechanical setting coefficient.
Constant force represents turning force in most games. Period force represents detailed strength of collision and road condition in the game, etc.

WHEEL CENTER CALIBRATION

Rotate the wheel to center manually, and then press the button **CENTER**

Two ways of changing the parameter in the setting:

1. Pull the slider to change the parameter
2. Input the parameter through keyboards, and then press "enter" to fuction
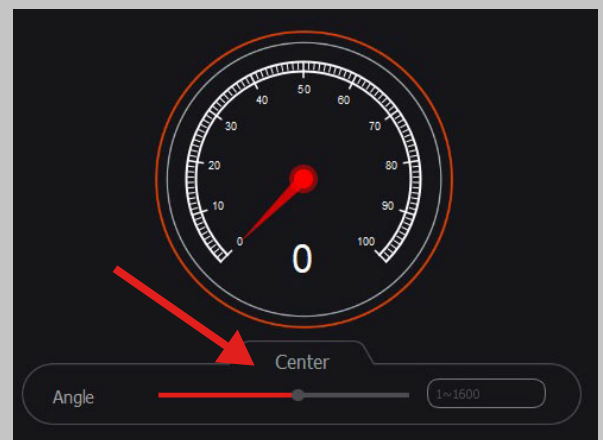
Upload

Upload parameter s from base to RaceManager.normally RaceManager will upload parameters autoly when it is opened or base is connected.

Save

To save parameters to base interal memorizer and remember these parameters even poweroff.

SaveAs

To save parameters to a "ini" file,user can save different setting for different game.and these setting can be loaded by pull-down menu next to "save as".

CALIBRATION

WHEEL CENTER CALIBRATION

All peripherals from simagic will be linked to base by can bus.here show all 6 axises and 64 buttons. That will be enough for most of all games.
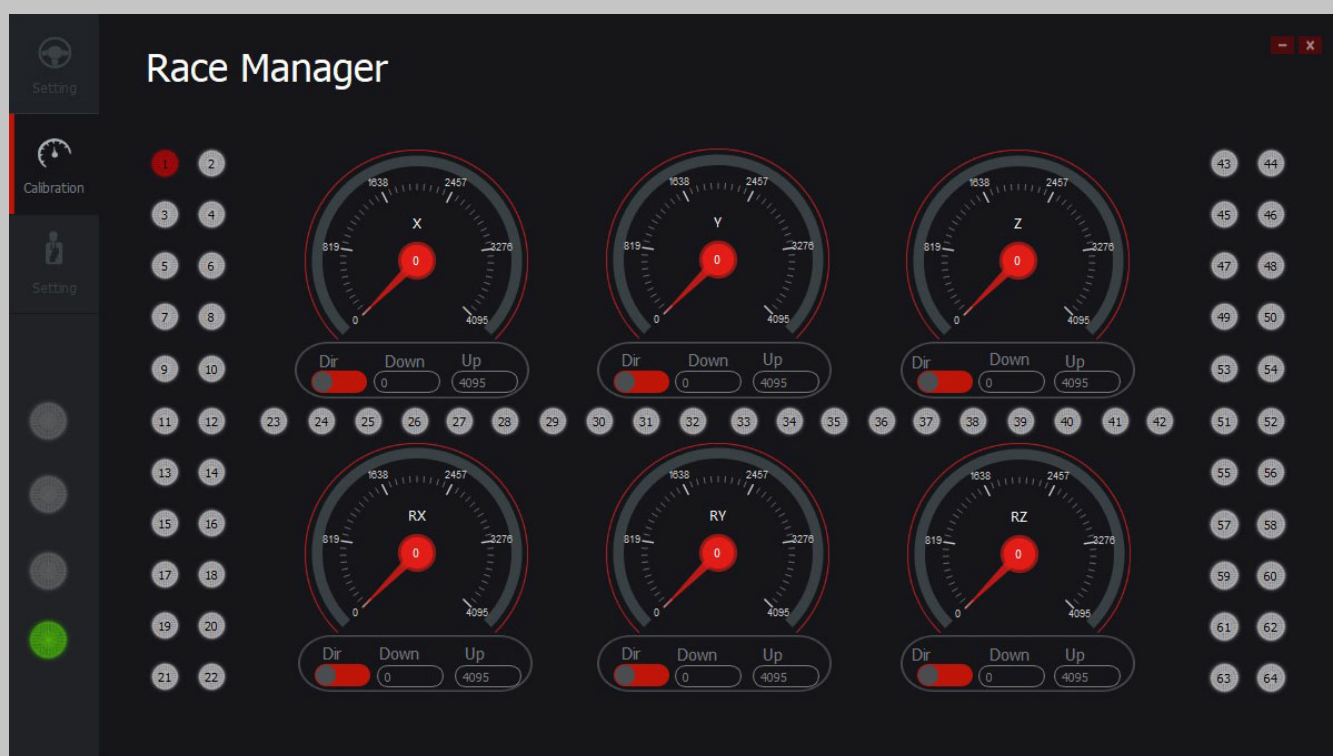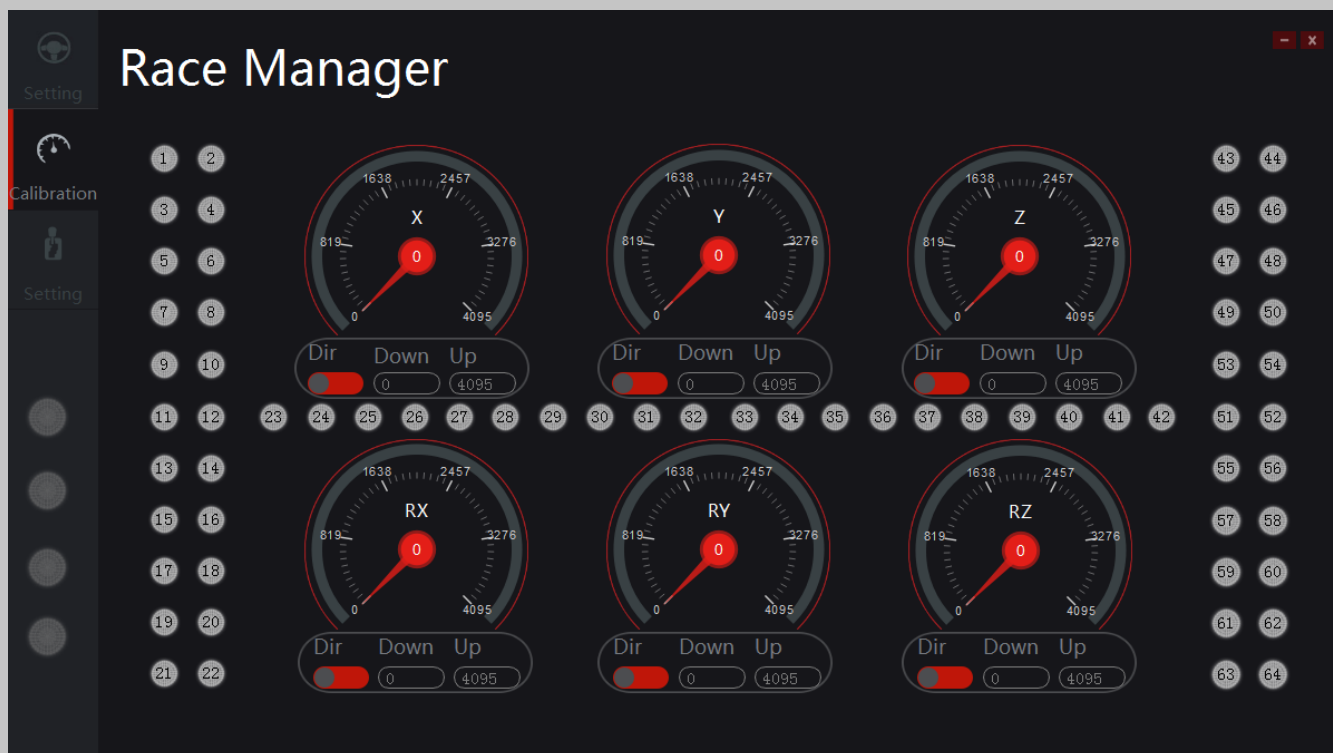
SETTING

MOTOR SPEED:

SIMAGIC have 5 scales of motor speed to set different feeling of motor.you can see it represent suspension hardness of car.
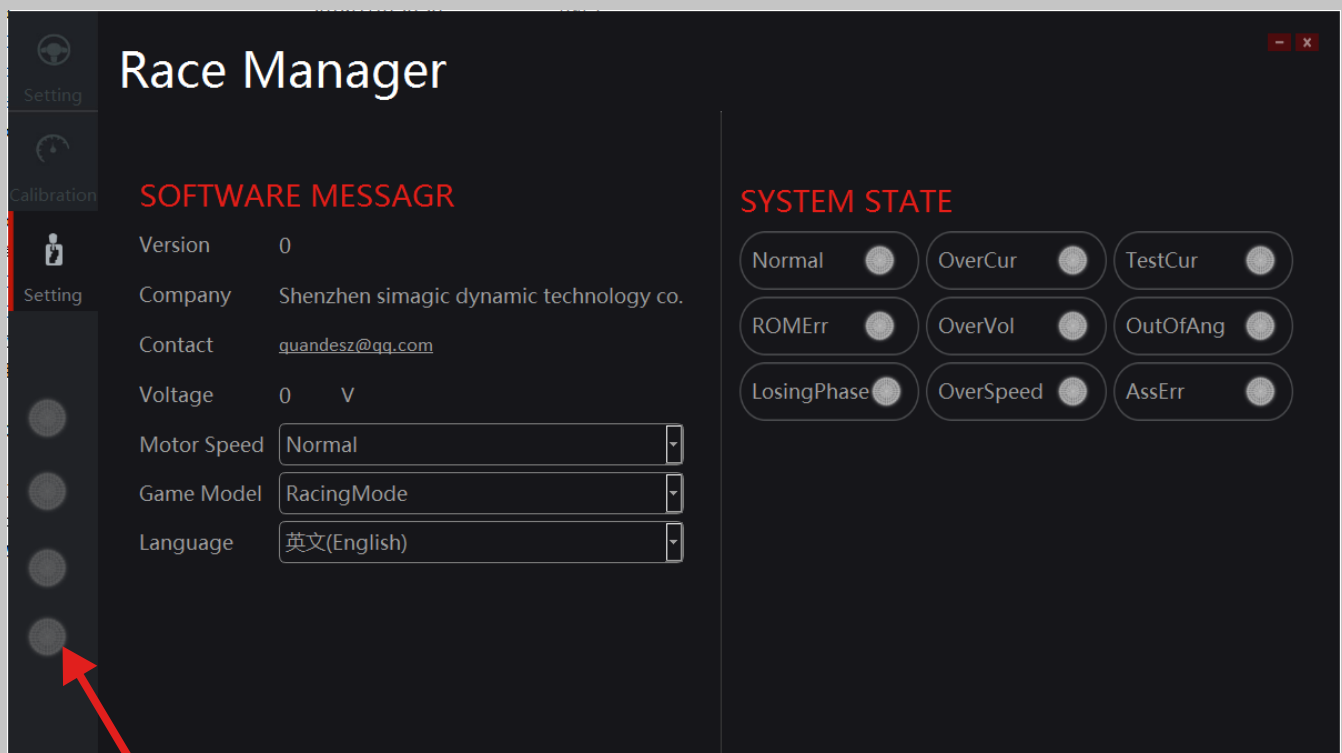
GAME MODEL:
Reserved

LANGUAGE:
To set language of Race Manager.

SYSTEM STATE:
To show the state of base. Errors will be show here. Normally errors can be clear by restart base.

BASE OK - This led indicated connection with base