

# SPiRE



DESIGNED  
TO WIN

*Virtue*

## VIRTUE PAINTBALL

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REBALL  
READY

### VIRTUE SPiRE SPECS

LENGTH: 9 inches  
WIDTH: 4 inches  
HEIGHT: 4 inches  
WEIGHT: 16.5 oz.  
BATTERIES: 3AA (not included)  
CAPACITY: 200+ balls  
WARRANTY: 90 days



Made in Taiwan

Patent pending.



## TABLE OF CONTENTS & QUICK SETUP

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Quick setup guide	1
Features	2
Battery installation	3
Spire operation	4
Cleaning and maintenance	5
Programming mode	6
Disassembly and assembly	7 - 8
Exploded views	9
Troubleshooting	10

### SPIRE™ SPECIFICATIONS:

LENGHT:	9 inches
WIDTH:	4 inches
HEIGHT	4 inches
WEIGHT	16.5 oz.
CAPACITY	200+ balls
BATTERIES	3AA

### QUICK SETUP

To start using the Spire™ immediately just install 3 AA batteries. The LED indicator shows the following information during normal operation.

- a. Blue, loaded and ready
- b. Red, not loaded, add paintballs.
- c. Yellow during startup, low battery
- d. Blue blink once a second, in standby mode, shoot or press LED cover to activate

For additional settings and using the programming mode see the section for programming mode



### WARNINGS

- \* Always wear eye protection designed specifically for paintball.
- \* Persons under 18 years of age should have adult supervision when using this product.
- \* Only use projectiles designed for the sport of paintball such as paintballs or Reballs™.
- \* Misuse of paintball equipment can cause serious injury or death.



## FEATURES

Thank you for purchasing the Virtue Spire™ paintball loader. This manual covers all aspects of your Spire™ loader. It is recommended your read the whole manual as it contains important product and safety information. For further information and any possible updates please go to [www.virtuepaintball.com/spire](http://www.virtuepaintball.com/spire)

- Tool-less Disassembly: Slide Lock Quick Release Button for easy, tool-less disassembly.
- Flex Cycle Paddle: Rubber Flex Cycle allows the Spire to feed even the most brittle paint.
- Spring Loaded Anti-jam Drive: Slides underneath and pushes jams out of the way before they occur.
- Shot Activated Sensor: Intelligent G-Force Sensor isolates and detects acceleration from each shot.
- Aggressive Low Profile Styling: Adds approx. 4" of height to the gun as a result of spacing saving with the vertically stacked gearbox.
- Single Tray Internal Construction: All of the Spire internals are attached to a single tray for easy removal.
- Transparent Back Shell: View paint levels in a single glance without showing everyone else.
- True 200™ Capacity: High ball capacity holds 200+ paintballs.
- Self-Optimizing Motor: Monitors motor torque and the G-force sensor to optimize performance.
- Internally Sorting Spire Drive: Spire shaped drive funnels and feeds paint, while reducing stack pressure.
- Wide Mouth Lid: Huge lid opening for easy reloading.
- Electronic Force Feed: Press the LED to manually force the Spire to spin.
- Quick Change Speedfeed: Optional Crown2 changes back and forth from Speed Feed to Lid in seconds.
- Reball Ready: Works with most Reballs™ and other branded reusable paintballs.
- Internal Dampening Cushion: Internal pad protects fragile paint from impacts in the front of the shell caused by running or diving and also reduces sound.
- Adjustable Settings: Speaker & LED, Speed, G-Force Sensitivity, Drive Force and Default Reset.
- Water Resistant Electronics: Conformal coated electronics protect the circuitry from moisture and paint.
- Extremely Tough Shells: Front, Bottom & Back Shells made from reinforced, impact modified materials.
- Super Bright Led: Adjustable LED that's easier to see in bright sun light.
- Audible, Instant-on: Push button on/off with audible speaker feedback.
- Ultra Light Weight: Weighs in at a mere 16.5 ounces.
- Long Battery Life: Ultra long battery life from 3 AA batteries.



## BATTERY INSTALLATION

The Spire™ uses 3 AA batteries. To install them follow these steps:

1. Remove back shell from the spire by unlocking back lock, pressing the lock and rotating the back shell away.  
For further instructions see page 7 for step by step disassembly instructions.
2. Remove body tray from shell
3. Open velcro strip covering the battery slots and insert 3 AA sized batteries. Follow markings on the bottom of the holder for correct polarity alignment. Tighten velcro over the batteries to ensure they don't come loose during playing.  
  
Use high quality alkaline or lithium ion batteries.  
Using rechargeable batteries is not recommended
4. Insert body tray back into the loader and push down until black lock clicks into locked position.
5. Insert back shell by aligning front onto top shell and pressing down into place.  
Move lock button down to locked position



## SPIRE OPERATION

### BASICS

The Spire™ uses a G-force sensor that detects the small recoil that occurs when shooting a paintball marker. During normal operation the Spire™ first rotates the anti-jam paddle forward until the stack of balls is full. This causes an increase in the force to move the paddle which is detected and the motor is then stopped. When a shot is fired the G-force sensor detects the shot and the paddle is rotated forward until the stack is full again. The faster the gun is fired the faster the paddle is rotated. When the Spire™ is out of paint it will keep a slow rotation that saves battery life, minimizes balls bouncing inside the loader and ensures balls loaded in will be fed all the way to the marker. If the spire is not used for a minute it goes into a smart standby mode where battery use is minimized. The Spire™ wakes up from the standby mode by simply shooting your paintball marker.

### BATTERIES AND LOW BATTERY INDICATOR

The Spire™ functions on 3 AA type batteries. For maximum feed rate please use fresh high quality batteries. It is recommended to use either alkaline or lithium ion type batteries. Using rechargeable batteries is not recommended. Do not use 9V batteries and do not exceed 5.5V input voltage. Always recycle used batteries according to the manufacturer's instructions.

There is a built in Low Battery Indicator (LBI) on the Spire™. When turning on the spire with good batteries you will hear a single beep and the LED will turn to either red or blue depending if you have paint inside the loader or not. If the batteries are low you will hear 3 short beeps and the LED will stay solid yellow for 1 second. At this point you should change your batteries.

### BATTERY LIFE

The life of the batteries varies very much depending on type of batteries used, temperature and environmental conditions, firing rate of the marker and the time used to fire the shots. As a general rule of thumb 1 set of batteries should last about 20,000 shots or 1 year.



## SPIRE OPERATION

### ELECTRONIC FORCE FEED BUTTON

The LED cover functions also as an electronic force feed button. When the Spire is turned on pressing the LED cover causes the loader to feed forward. This can be used in various situations where the marker cannot be fired or there is a malfunction and you want to force the loader to spin.

### REBALLS™

The Spire was designed to be very reliable and easy on paintballs. This allows it to function in most cases using Reballs™ or similar projectiles. Making sure the Reballs™ used are clean before loading them into the spire will improve the reliability. Due to the very high friction of Reballs™ the feed rate maybe lower and battery consumption can be higher.

### CLEANING AND MAINTENANCE

For normal cleaning of the Spire, remove the back shell and body tray and set them aside. The shell can be washed under the sink using warm water and a mild detergent. Do not use a dish washer, boiling water or other strong chemicals as this can weaken the plastic. Remove the Spire cone from the body tray and wash it like the shell. The body tray can be wiped down.

There is no particular maintenance needed for the Spire. Keeping it clean and using fresh batteries is all that is required. If you leave the spire unused for more than 6 months it is suggested to remove the batteries to avoid damage due to a possibly leaking battery.



## PROGRAMMING MODE

There are five settings that can be changed in the Spire software as well as a factory reset option. The settings are changed through the programming mode which can be accessed by turning the Spire ON while pressing the LED cover simlutenously and then releasing the LED cover again. The LED will cycle through a rainbow of colors. The LED will stop on purple indicating you are now in the first programming setting. Tapping the LED cover will toggle through the different programming settings. When the LED is lit for the setting you wish to adjust press and hold the LED cover until the LED begins to flash, and then let go. The LED will flash the number of times the current value is set to. When the LED stops flashing you then have 3 seconds to enter the new value by tapping the LED cover the amount of times you want the new value to be set to. After you have set the new value, the LED will flash the number of times you have entered and then flash the rainbow of colors, returning to the color you have adjusted indicating that the new value has been saved. To exit the programming mode turn the Spire™ off by pressing the on/off button.

### SOUND – Values 1-2, (default 1), color purple

This setting allows you to turn the sound feature on and off. Setting 1 is ON, setting 2 is OFF

### LED – Values 1-2 (default 1), color green

This setting allows you to turn the LED off. This can be useful for example when playing night games. Setting 1 is ON, setting 2 is OFF.

### STANDBY MODE - Values 1-2, (default 2), color blue

This setting allows you to turn the standby mode on and off. Setting 1 is ON, setting 2 is OFF. Turning the standby mode ON will increase battery life

### FACTORY RESET

To return all setting to the factory defaults, while in programming mode, hold the LED cover down for 10 seconds until the LED turns white. Once the LED turns white, the led will then flash through the rainbow of colors indicating that all settings have been returned to the factory default.

### G-FORCE SENSITIVITY – Values 1-5 (default 3), color red

Do not adjust this setting unless there is problem with your Spire, and you have already removed and cleaned the Spire Drive and are sure you have good batteries.

This setting allows you to adjust the sensitivity of the G-force sensor. Setting 1 is the least sensitive and setting 5 is the most sensitive. If the spire does not detect the recoil of your marker, for example when playing at very low velocities, you can raise the sensitivity. If the Spire is spinning too much causing pop-corning, you can lower the sensitivity. Please note, too high of a sensitivity can cause unwanted pop-corning, and too low of a sensitivity can cause the loader not to detect shots. It is only recommended to adjust this setting if absolutely needed.

### DRIVE PRESSURE: Values 1-5 (default 2), color yellow

Do not adjust this setting unless there is problem with your Spire, and you have already removed and cleaned the Spire Drive and are sure you have good batteries.

This setting allows you to adjust the Drive Pressure. If the spire stops spinning before the balls stack is full, you can raise this setting. Please note too high of a setting can cause unwanted popcorning, and too low of a setting can cause the spire to stop spinning to soon.



## DISASSEMBLY AND ASSEMBLY

### REMOVE AND INSTALL BACK SHELL

To remove the back shell from the Spire, first move the lock button located in the back of the Spire up to the unlock position. Then press the lock button in and pull the back shell up and forward to remove it.

To install back simply align the front tab of the back shell with the front shell and press down until lock clicks into place. Move the lock button down to the locked position to ensure the back shell doesn't come off accidentally while playing.



7

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## DISASSEMBLY AND ASSEMBLY

### REMOVE AND INSTALL BODY TRAY

After removing the back shell, move the gray locking tab forward and pull the body tray up away from the shell assembly.

When re-installing the body tray point the front of the tray down into the shell as you push it forward. The bottom shell will guide the tray into position. When correctly installed, the tabs located on the front tray must be under the front support in the tip of the loader. See picture below



When re-inserting body into shell ensure that tabs on front of the body are aligned with slots on the front of the body

8

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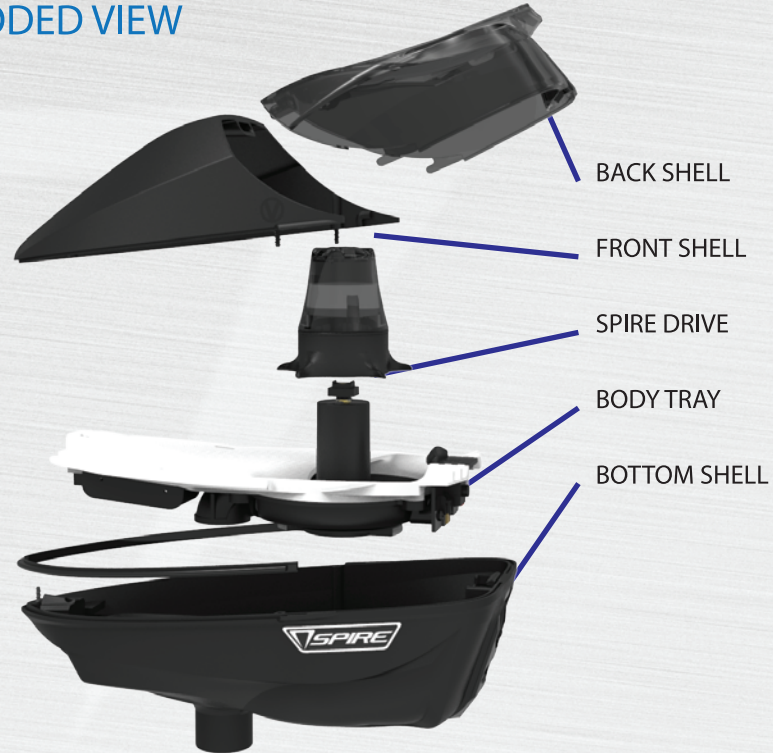


## DISASSEMBLY, ASSEMBLY & EXPLODED VIEW

### REMOVE AND INSTALL SPIRE DRIVE

To remove the Spire Drive from the loader first remove the back shell and the body tray. After that pull the spire drive straight up. It will come loose and you will be able to pull it away from the body.

To re-install the Spire Drive, align one of the arms into the ball tray as pictured below, and push down while rotating the spire drive counterclockwise. It is ok to bend the arms while pushing down. To lock in place simply align the square block with the square hole in the spire drive and push down hard until it clicks fully in place.



BACK SHELL

FRONT SHELL

SPIRE DRIVE

BODY TRAY

BOTTOM SHELL



## TROUBLESHOOTING

This manual covers only the basic troubleshooting information. For up to date support and contact information please visit [www.virtuepaintball.com/spire](http://www.virtuepaintball.com/spire).

### SPIRE™ NOT TURNING ON:

- Make sure the tray is seated properly in the shell assembly. (Does the tray turn on when it is outside the Spire?)
- Make sure batteries are installed and the polarity is correct. The negative (-) of the battery should be touching the spring of the battery holder
- Make sure batteries have power in them. Sometimes even brand new batteries are dead, test with another set to make sure.
- Check that the cable from the battery holder to the PCB is connected; the cable is the one with a red connector

### SPIRE™ LED OR SPEAKER NOT WORKING:

- Make sure the LED and Speaker are turned on in the program menu, or perform a factory reset using the instructions on page 6.

### SPIRE™ NOT DETECTING SHORTS FIRED

- Make sure the Spire™ is securely attached to your marker
- Check the G-force sensor cable is attached to the circuit board. This is the cable with 3 wires.
- If shooting at low velocities raise the sensitivity of the Spire™ by following the instructions on page 6

### SPIRE™ IS FEEDING VERY SLOW WHEN PERFORMING A SO CALLED DROP TEST

- Since the Spire™ is designed to detect the recoil of your paintball marker it is not possible to test its speed by just feeding paintballs through it without actually shooting paintballs through a marker. The Spire™ will keep spinning faster and faster as your markers speed increases. Please only test the speed of the Spire™ when on your marker and shooting paintballs. Use fresh lithium ion type batteries and good paintballs for maximum rate of fire.