# VIRTUE VLOCITY Chip

- ★ **Breakout tension setting –** *shoot faster on the break!*
- ★ **Preset Modes for: Xball, NPPL, Ramping, Reball**
- ★ **12 adjustable tension settings**
- ★ **Improved Battery Life** *w/Battery Type Mode Setting*
- ★ **Enhanced Anti-Jam Logic**
- ★ **10 minute idle Sleep Mode**
- ★ **Easy Programming Menu**

LIFETIME Bullet Proof WARRANTY

Adjustable **15 - 35** Target Feed Rate

easy plug-in play micro chip

www.virtuepaintball.com

## Virtue VLocity Chip Features
*fits all Vlocity hoppers*

**Adjustable Feed Rates up to 35BPS** - set the target feed rate from 15 to 35 balls per second.

**Dramatically Improved Battery Life** - Batteries now last up to 3x as long!

**Preset Modes** - Choose from preset hopper settings custom designed for Xball, Semi, Ramping, Millennium & Reballs *or*

**Custom User Definable Mode** - specify the precise settings of your VLocity with thousand of possible combinations

**Breakout Setting** - "one touch" Breakout Setting instantly configures your hopper & tension settings for max feed rates on the breakout.

**Adjustable Tension** - 12 force settings allow you to precisely control the pressure on the ball stack for *increased out of the gate speed, improved battery life,* and *gentleness on paint.*

**Decreasing Stack Tension (DST)** - save battery power & improves performance by allowing you to set the stack tension to decrease overtime when your gun is not shooting.

**Electronic Anti-Jam Logic** - Adjustable anti-jam setting allows you control the anti-jam logic to compensate for brittle or hard shelled paint.

**Instant Unjam** - Just tap the button to manually clear a jam.

**Smooth Drive Operation** - enhanced motor programming to allow for smoother, more consistent feeding & reduced wear on the internals.

**Battery Mode Setting** - Optimize performance based on the use of Lithium Ion or Alkaline batteries

**Low Battery Indicator** - LED alerts you when your batteries are at 25% battery capacity

**Sleep Mode** - save batteries with 10 minute idle sleep mode

**Easy Programming Menu** similar to Virtue gun software

Viewloader Factory Approved

**Exclusive Reball Certification** - Reballs feed over twice as fast compared to other software.

*"Oh sh!t, oh sh*t, that's fast!*
*The best upgrade for using Reball in your Vlocity!"*
*- Alvaro Mesquita, Manager of Reball*

## Virtue VLocity Chip Installation

1. Remove the 7 screws from the body of the hopper. Also remove the battery door and batteries.

2. Seperate the two clam shell halves from the main drive of the hopper. Be careful when removing the hopper lid from the clamshells not to lose the tiny lid spring.

3. Flip the drive over and remove the two circuit board retaining screws.

4. Lower the board and disconnect the motor plug.

5. Flip this board over and you will be able to see where the chip is resting. Use a chip pulling tool or a flat head screwdriver to gently pry up the chip. Please do this carefully to insure you do not damage the electronics. If using a screwdriver you should lift a small amount from each side at a time, alternating back and forth on both sides of the chip until the chip easily comes out.

6. Now take your Virtue Vlocity chip out of its packaging and line up the pins on the chip to the terminal on the board, with the <u>semi circle depression on the chip matching up with the semi circle on the socket of the circuit board.</u> Note: if you put the chip in backwards, it will not work.

7. Line up all the pins of the chip into the tiny holes in the receiver slot and push down firmly and evenly. Do not force any pins in!

8. Now it is time to reassemble the hopper. Line the board up with the screw holes on the main drive. Secure it with the original board screws, and slide the main drive back into place.

9. Place the two halves of the clamshell together making sure the lid is working properly. Make sure the spring is installed properly otherwise your lid may not spring open.

10. Secure the two halves of the clamshell with the seven screws. Re-install battery door making sure you use fresh batteries.

## Getting Started...

### LED Indicator
During play the LED on the back of the hopper alerts you to the status of your marker.
- ● Solid Green: Balls in Loader; Ball Stack Full
- ● Solid Red: No or Few Balls in Loader; Reload immediately
- ● Solid Yellow (During startup): Battery Low (25% capacity)
- ● Flashing Green: Loader is in 30 Second Breakout Mode
- ● Flashing Red: Loader is in 60 Second Breakout Mode

### Button Operation
The button on the rear of your Vlocity can be used to instantly do the following:
**Tap button:** Reverses the Loader to clear a jam
**Hold button for 1 Second:** Puts Loader into breakout mode (see below), breakout mode lasts 30 seconds after the first shot.
**Hold button for 3 Seconds:** Puts the Loader in breakout mode(see below), breakout mode lasts for 60 seconds after the first shot

### Breakout Mode Explained
Before the start of a game, you can prime the loader with maximum Tension and Target Feed Speed by putting it into **Breakout Mode**. To do this, with the loader on, hold the program button down for 1 second, or 3 seconds. The LED will now Flash Green indicating that the loader **Tension Setting** and **Target Feed Speed** are **maxed** out and will remain in that state for 30 seconds if you held the program button for 1 second, or **Breakout Mode** will last for 60 seconds if you held down the program button for 3 seconds. You can re enable the breakout mode time at any time by holding in the program button for an additional 1 or 3 seconds.

## Programming your Virtue VLocity

### Programming Modes
To access the programming mode of the Virtue Vlocity Chip, hold down the programming button, and turn the loader on. The LED will then cycle through a rainbow of colors and stop on Red, indicating that you are now in programming mode. Tapping the Programming Button will then toggle through the different programming modes:
- ● Red: Feed Mode
- ● Green: Target feed speed
- ● Yellow: Tension setting
- ● Flashing Red: Un-jam Speed
- ● Flashing Green: Battery mode
- ● Flashing Yellow: Decreasing Stack Tension (DST)

### Changing a Setting
When the LED is lit for the desired setting, press the program button until the LED begins to flash. The LED will flash the number of times the current value is set to. When the LED stops flashing you then have 2 seconds to enter in the new value by tapping the program button the amount of times you want the new value to be set to. After you have set the new value, the LED will flash back at you the number of times you have just entered, and then flash through the rainbow of colors, returning to the color you have just adjusted, indicating that the new value has been set. To exit programming mode, shut the loader off.

### Reset to Factory Default
To return all settings to the factory defaults, while in programming mode, hold the programming button down for 10 seconds. When the reset is complete, the LED will light up yellow, and then when you release the button, the LED will flash all the colors 3 times in a very fast sequence indicating that all settings have been returned to the factory default.

## Feed Mode - Red (values 1-6, default 6)
The Feed Mode setting features 5 preset modes and 1 custom user defined mode. The first 4 presets (Semi, X-ball, Millennium & Ramp) have optimzed settings for that style of play leading to increased performance and battery life.

**1. Semi Auto Mode**
*Target feedspeed: 25bps* | *Tension 5*
*DST: 10* | *Unjam speed: not affected*

**2. X-Ball Mode**
*The Motor Logic in this mode is also optimized to respond faster for X-Ball*
*Target feedspeed: 20bps* | *Tension : 3*
*DST: 1* | *Unjam speed: not affected*

**3. Millennium Mode**
*The Motor Logic in this mode is also optimized to respond faster for Millennium*
*Target feedspeed: 20bps* | *Tension : 1*
*DST: 1* | *Unjam speed: not affected*

**4. Ramp Mode**
*Target feedspeed: 40bps* | *Tension : 10*
*DST: 10* | *Unjam speed: not affected*

**5. Re-Ball Mode**
*Reball setting only changes the Un-jam logic. Feed speed, tension & decreasing stack tension (DST) set to stock or User definied settings.*
*Target feedspeed: User Defined* | *Tension : User Defined*
*Tension decrease: User Defined* | *Unjam speed: Advanced un-jam*
*logic for Reball, overrides Un-Jam Speed Setting*

**6. Custom User Defined Mode** – Loader performs based stock or user defined program settings

### Feed Mode Programming Example
1. With the loader off, press the back button, turn the loader on, and then release the button.
2. The LED will flash a rainbow of colors and stop on red for Feed Mode.
3. Hold the button, the LED will flash the Feed Mode value.
4. Press the button the number of times of the desired Feed Mode (1-6).
5. The LED will flash the number of presses you entered, then flash the rainbow of colors, and stop on red. The new value is set.
6. To exit programming mode, turn the hopper off.

## Target Feed Speed - Green (values 15-35bps, default 20)
Target Feed Speed allows you to adjust your loader to the approximate rate of fire of your marker. By doing this you ensure less breakage in the loader and breech of your marker, conserve battery life, as well as achieving top speeds. **This setting is only applicable in the Custom User Defined Feed Mode & Reball Feed Mode.**

The Target Feed Speed is adjustable in 1 ball increments from 15 to 35bps. Value 15 = 15bps. Value 16= 16bps. Value 20 = 20bps and Value 35 = 35bps. Etc.

*To compensate for various paint types, weather & battery conditions, Virtue recommends overestimating your target feed speed by 3-5bps to ensure your hopper feeds fast enough.*

**Target Feed Speed is automatically set for the Semi, Xball, Millennium & Ramp Modes and can not be changed.**

**When in Reball mode, you must set the Target Feed Speed** to the desired setting, or it will run at the default speed.

### Feed Speed Programming Example
1. With the loader off, press the back button, turn the loader on, and then release the button.
2. The LED will flash a rainbow of colors and stop on red for Firing Mode. Press the button once until turns green for Target Feed Speed.
3. Hold the button, the LED will flash the number of times of the Target Feed Speed value.
4. Press the button the number of times of the desired Feed Speed (15-35bps).
5. The LED will flash the number of presses you entered, then flash the rainbow of colors, and stop on green. The new value is set.
6. To exit programming mode, turn the hopper off.

## Tension - Yellow (values 1-12, default 1)
Tension optimizes response time, gentleness on fragile paint, and conserves battery life. The Tension setting controls the tension on the ball stack when you're not shooting and allows you to maximize your hopper's "out of the gate" speed for faster speeds of fire when you first start shooting. The lower the tension, the slower the loader will respond, the higher the tension, the faster the loader will respond. Fragile paint may break easier under the higher tensions. Also note, the higher the tension, the more battery life is used. **This setting is only applicable in the Custom User Defined Feed Mode & Reball Feed Mode. Tension is automatically set for the Semi, Xball, Millennium & Ramp Modes and can not be changed.**

1: No Tension || 2: Min Tension || 3-11: Progressively increasing levels of tension || 12: Max Tension

### Un-Jam Speed - Flashing Red (values 1-4, default 1)
The Un-Jam Speed controls how much force will be used when the loader tries to automatically clear any jams. The default value is 1, which is the lightest setting and will be enough to Un-Jam most paintballs. Value 4 is the highest setting and should only be used with really hard paint. **This setting is only applicable in the Custom User Defined Feed Mode. Un-Jam is automatically set for the Semi, Xball, Millennium, Ramp & Reball Modes and can not be changed.**

### Tension & Un-Jam Speed Programming Example
1. With the loader off, press the back button, turn the loader on, and then release the button.
2. The LED will flash a rainbow of colors and stop on red for Firing Mode. Press the button twice until turns yellow for Tension (or 3 times until it turns flashing red for Un-Jam speed).
3. Hold the button, the LED will flash the number of times of the current value.
4. Press the button the number of times of the desired value (1-12 for Tension or 1-4 for Un-Jam Speed).
5. The LED will flash the number of presses you entered, then flash the rainbow of colors, and stop on yellow if you are changing Tension, or flashing red if you are changing the Un-Jam Speed. The new value is set.
6. To exit programming mode, turn the hopper off.

## Battery Mode - Flashing Green (values 1-2, default 1)

This mode optimizes the hopper to increase performance based on what kind of battery you are using. Value 1 is for typical 9V alkaline batteries. Value 2 is for lithium ion rechargeable batteries like the ones that are supplied with the XSV VLocity loader. Every time you set this option in the programming menu, it will reset the low battery indicator counter to 100% (Full Charge). The Low battery indicator will then tell you when you are down to 25% battery life.

## DST - Flashing Yellow (values 1-11, default 5)

Decreasing Stack Tension gradually decreases the stack tension as time goes by without the gun firing a shot. This allows you to maximize battery life and prevents paint from being crushed by prolonged force on the ball stack. The values range from 1-11. Value 11 disables DST and your hopper will constantly apply the amount of force you set in the Tension setting. The DST logic activates after 5 seconds of the ball stack not moving. Values 1-10 progressively increase the time that the Tension force setting is applied and is gradually decreased. For instance, setting the DST to 1 is the lowest DST setting and will reduce the pressure on the ball stack the quickest. Setting the DST to 10 is the highest setting and will take the longest time to gradually reduce pressure on the ball stack. The default setting is 5. **This setting is only applicable in the Custom User Defined Feed & Reball Modes. DST is automatically set for the Semi, Xball, Millennium & Ramp Modes and can not be changed.**

## Battery Mode & DST Speed Programming Example

1. With the loader off, press the back button, turn the loader on, and then release the button.
2. The LED will flash a rainbow of colors and stop on red for Firing Mode. Press the button 4 times until turns flashing green for Battery Mode (or 5 times until it turns flashing yellow for DST).
3. Hold the button, the LED will flash the number of times of the current value.
4. Press the button the number of times of the desired value (1-2 for Battery Mode or 1-11 for DST).
5. The LED will flash the number of presses you entered, then flash the rainbow of colors, and stop on flashing green if you are changing Battery Mode, or flashing yellow if you are changing the DST. The new value is set.
6. To exit programming mode, turn the hopper off.

## Troubleshooting

Always make sure you use a fresh set of batteries in your VLocity. If you encounter any problems with your hopper, check the standard VLocity manual first. Otherwise here are some common troubleshooting tips with the Virtue VLocity Chip.

**Hopper won't turn on**
Check/Replace Batteries
OR
Check for loose wiring plugs
OR
The chip may be in backwards, carefully remove and re-install with the half moon shape lining up properly on the same side of the half moon slot on the circuit board.

**Poor Battery Life**
Decrease the Tension setting
OR
Decrease the DST setting
OR
Decrease the Target Feed Speed to a lower feed rate.

**Hopper breaking paint**
Note: Is it cold out? Paint gets brittle and breaks easily in the cold.
OR
Decrease or disable Tension setting.
OR
Decrease the Target Feed and/or DST setting and Anti-Jam settings.

**Loader Jams**
Increase the anti-jam speed
OR
Increase the tension setting

**Not feeding fast enough**
Replace batteries
OR
Increase the target feed rate
OR
Increase the tension setting
OR
Increase or disable the DST setting

*Virtue VLocity Chip specifications subject to change without notice*