

Marq Victory Pump

Bob Long Technologies

MVP

Bob Long Technologies
209-293-4440
www.boblongdirect.com

CAUTION: READ ALL WARNINGS BEFORE USING OR ATTEMPTING ANY WORK ON YOUR MARKER. SHOULD YOU BE UNSURE AT ANY POINT, STOP AND SEEK PROFESSIONAL SUPPORT.

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Warning

This paintball marker is not a toy. Misuse or mishandling can result in serious injury or death. Every person within range of a loaded paintball gun must wear eye protection specifically designed for paintball. It is recommended at least 18 years of age to purchase, 14 years old to use with adult supervision or 10 years old to use on paintball fields meeting ASTM standards F1777-97. Ensure you read the entire instruction manual before operating your marker.

Warranty

Bob Long Technologies warrants our paintball markers to be free from defect in materials and workmanship for a period of 1 year from purchase date. This warranty will only be honored for the initial retail purchaser and is non-transferable. Wear items such as batteries and seals are not covered under warranty.

This warranty does not cover:

- > Any system failure resulting from the use of a non-authorized propellant. The only authorized propellants are nitrogen or compressed air.
- > Surface damage such as scratches, nicks, or dings.
- > Improper disassembly or re-assembly.
- > Improper lubrication. The only authorized grease for maintaining a Bob Long marker is Molykote® 55 made by the Dow Corning Corporation (Dow 55). Authorized oil is limited to Tri-flow® or any other synthetic oil made specifically for maintaining a paintball marker.
- > Modification or any other alteration of a marker or its parts. Dremels, acid, most things involving a show on the Bravo network or HGTV fit in this category.
- > Misuse of any conceivable kind. Yes, letting a hipster use your marker may damage your warranty.

This warranty is limited to repair or replacement of defective items with the initial retail purchaser to pay shipping costs. The initial retail purchaser must enclose a copy of the original sales receipt with the marker to be repaired for this warranty to be honored.

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Introducing the MVP

The first pump marker built off the chassis of the legendary Marq Victory – the MVP! We took the internal air passages, grip frame dimensions, and styling queues from the Marq Victory then threw out preconceptions for how a pump has to work. Combining 16 roller bearings and the new firing engine we built the first pump deserving of the MVP name. Ok, the marketing folks made their spiel – what does it mean? We designed our marker to not lose the huge amount of air that others do since they fire without the bolt sealing the breach. We put in the bearings so the trigger and pump are buttery smooth. Butter made us think of waffles so we ate some waffles. Then we went back to work and finished designing and building a really cool pump that is a BLAST to play with and will keep you on the field longer.

Ready for the Field

The Marq MVP provides what you need to start playing pump. You will spend more time getting the safety brief at your local field than it takes to connect a tank and hopper. Actually some safety briefs are pretty long and you could fix lunch while listening to it. Pay attention to the safety brief. The folks running the field want you and the other players to have fun and avoid injury. You can help the other players cry softly inside their masks when they walk off the field after you shoot them with your MVP. Just listen to the briefing and chrono so you get to that point.

Component	Feature
Feedneck	LeverLock – the most adjustable feedneck available
Pump Rail	Rides on 12 roller bearings
Pump Handle	Simplified for easy customization
One Piece Tournament Barrel	14" .685 Autococker threaded
Grips	Unique highly ergonomic wraparound design

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Quick Start

Safety

Always use proper safety equipment and observe the rules for the locations where you play. Although the MVP doesn't have the electronics to enable you to shoot 234,251 paintballs with only one trigger pull, it still fires them at the same velocity. Always use a barrel blocking device when in an area where people do not have their masks on. If you do manage to shoot 234,251 balls on one trigger pull with the MVP let us know. Put it on a video and we will give you something special. Only the first person to do this gets the something special. Everyone else gets a sore pumping arm.

Installing Air Tank

Much like any other tournament marker, the MVP requires the use of compressed air or nitrogen only. Use of a low pressure compressed air system is recommended with each Bob Long marker. If using an adjustable-output air system, set the system's output to between 450 and 550 psi. Make sure the ASA (Air Source Adapter) is in the off position by turning the chrome cam drive knob on the bottom of the ASA counter clockwise. Attach your compressed air tank by screwing it into the ASA. When you are ready to chrono your marker turn the cam drive knob clockwise until it completes turning – this is shortly after you hear air pressurizing the marker.

Adjusting Velocity

The Regulator on the MVP should be adjusted at the chronograph of your field before you begin play. The regulator is adjusted using a 1/8" hex wrench at the shown location on the back of the grip frame.

Turning the screw clockwise (or inward) will increase your velocity; turning the screw counterclockwise will decrease your velocity. Only turn the wrench 1/8th -1/16th of a turn with each adjustment.



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Maintaining the Detent

In the event of a chopped ball or debris in the breach, or just to see some old school tech you should remove the spring detent for cleaning.

1. Unscrew the ball detent cap from the left side of your marker
2. Remove the spring by making sure the bolt is to the rear of the marker and tapping it out into your hand or using an O-ring pick to assist in sliding it out. Wipe off any old lubrication or dirt with a microfiber cloth or cotton swab. If using a swab make sure that no fibers are caught in the spring coils
3. Put a light coating of grease on the spring.
4. Reinsert the spring detent and retaining screw. When reinserting the spring make sure the bolt is to the rear of the marker.

Note:

If your buddy had your hopper cranked up on pressure so high it shattered the balls in the stack resulting in a giant mess you will need to remove the engine to fully clean the bolt and everything else. Don't let that guy mess with your gear again.

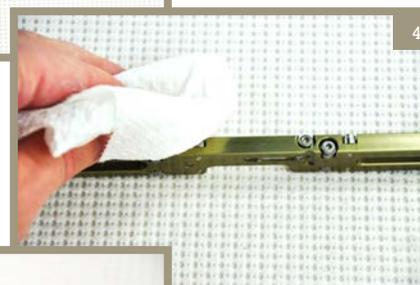
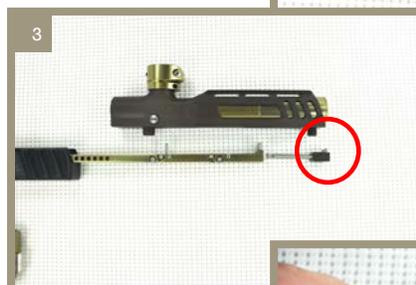


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Pump Rail and Grip Frame Removal

The MVP has a straight forward and simplified disassembly process. This marker is designed to be maintained by only removing two screws.

1. Remove the two grip frame screws from the front and rear of the grip frame using a 3/32 hex wrench.
2. Lower the grip frame from the body. The funky flat piece is called the Pump Rail Track. The front screw is removed from the top of the rail track and the rear screw is removed from under the grip handle. You can set it aside along with the grip.
3. Lower the pump arm from the body of the marker by gently pulling it away and lowering the return spring guide from the body. You may need to push back on it slightly to release the springs.
4. Wipe down rail track to remove any old lubricant. Ensure all bearings roll smoothly.
5. (Optional Step) With the barrel removed from the marker, the two mounting screws for the pump handle are accessible from the top. Remove the screws and slide the pump handle off of the pump rail.



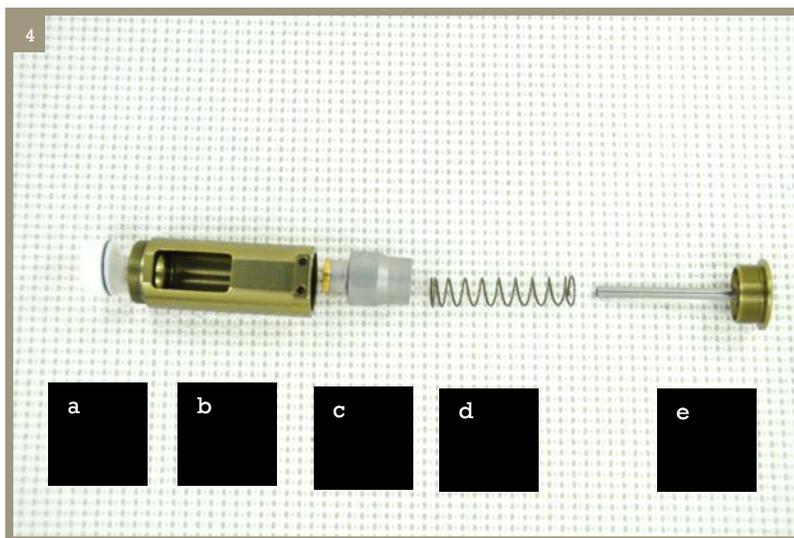
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Engine Removal and Disassembly

With the Grip Frame and Pump Rail removed you can now access the engine for inspection and cleaning.

1. Slide the Engine out the back of the marker body.
2. Slide the Bolt forward off of the Blast Guide.
3. Unscrew the Volume Chamber from the Hammer Housing.
4. Unscrew the back cap from the hammer housing using a 3/16" hex wrench.
 - a. Poppet seal
 - b. Hammer Housing
 - c. Hammer
 - d. Main Spring (Hammer Spring)
 - e. Hammer Guide Cap (Back Cap)

Note: Standard Maintenance does not require removal of the Teflon poppet seal. Use a chopstick to push the poppet seal forward and out of the housing.

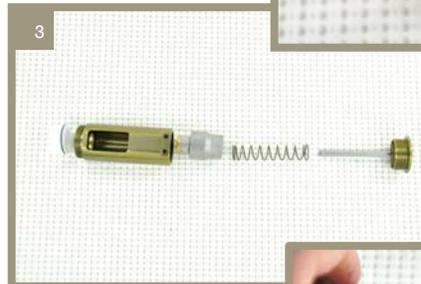


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Engine Cleaning and Reassembly

Existing lube and any debris should be removed before reassembly of the engine and body.

1. Use a swab to clean out any old lube or debris from the internal portions of the engine. Wipe down the external portions with a lint free cloth.
2. Apply a light coating of Dow 55 to all of the O-rings. The Volume Chamber at the front of the engine has internal O-rings on both the front and rear.
3. If you removed the Poppet Seal, insert it into the Hammer Housing O-ring side first. Insert the brass component of the hammer toward the front.
4. Oil the rod on back cap using 2-3 drops and spreading them over the shaft.
5. Place the Hammer Spring on the Guide then screw the Guide onto the Hammer Housing.
6. Screw the Hammer Housing to the Volume Chamber, making sure to insert the Blast Guide.



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Maintaining the Regulator - Disassembly

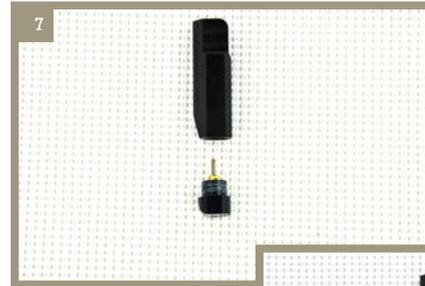
Your MVP comes with the best regulator available. To ensure the highest consistency and the maximum flow possible, we recommend that you clean and lubricate it according to the maintenance schedule or whenever you encounter inconsistency. The regulator will perform flawlessly for many cases of paint before requiring any maintenance. Most users won't need to clean the regulator more than once per season.

1. With the grip frame assembly removed from the marker body, remove the grip screws and grips.
2. Remove the two screws indicated in order to disconnect the Pump Rail Track. **NOTE: screws may have Loctite® from the factory.**
3. Unhook the Trigger/Sear Return Spring from the Return Spring Post and lift the Sear Assembly out of the grip frame
4. Remove the two screws from the inside of the grip frame to release the ASA.
5. Remove the Regulator Retaining Screws located in the top and bottom of the grip frame
6. Tilt the top of the Regulator forward and the bottom to the back. This shifts the regulator from the adjustment screw in the back of the grip frame. **Caution: one of the two balls for the adjustment mechanism may roll out of the adjustment hole. Retain it for reassembly. If you end up one ball short you won't have a good day.**



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7. Remove the large, upper portion from the regulator assembly by lifting it from the lower, which houses the main valve.
8. Reach into the regulator base with tweezers or needle nose pliers to remove the regulator piston.
9. After the piston is removed, tap the upper portion of the regulator on the palm of your hand until the Spring Stack Assembly slides out.
10. Remove the retaining o-ring from the spring follower. One ball bearing may come out of the body with the shim stack. It is slightly larger than the one that was in the back of the regulator. If your balls don't drop out just leave them in place.



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Maintaining the Regulator – Cleaning and Reassembly

The regulator needs very little maintenance. For most users this will mean only disassembly and cleaning once per season or after many cases of paint.

1. Use a swab on the interior of the regulator base to clean debris and existing lube.
2. When reassembling the Spring Stack Assembly the top and bottom spring washers curve to the outside. The retaining o-ring does not require lubrication.
If in doubt – just stack the spring washers so they look like:)()()()
3. Grease the piston O-ring then gently replace the spring follower and piston into the regulator base. There is a concave area around the O-ring that holds additional lube and reduces the need for frequent maintenance. (Note: If the ball came out of the regulator body replace it before inserting the spring assembly.)
4. Place the regulator in the grip frame with the top tilted forward. If needed, replace the adjustment ball in the back of the regulator.
5. Since both balls are in place inside the regulator assembly push the top of the regulator toward the back of the grip frame and insert the top regulator mounting screw. Do not fully tighten top screw until the bottom screw is threaded at least halfway in.
6. Reattach the ASA after making sure the sealing O-ring is in place.
7. Insert the Sear Assembly spring through the top of the grip frame and reattach the Sear Spring to the post.

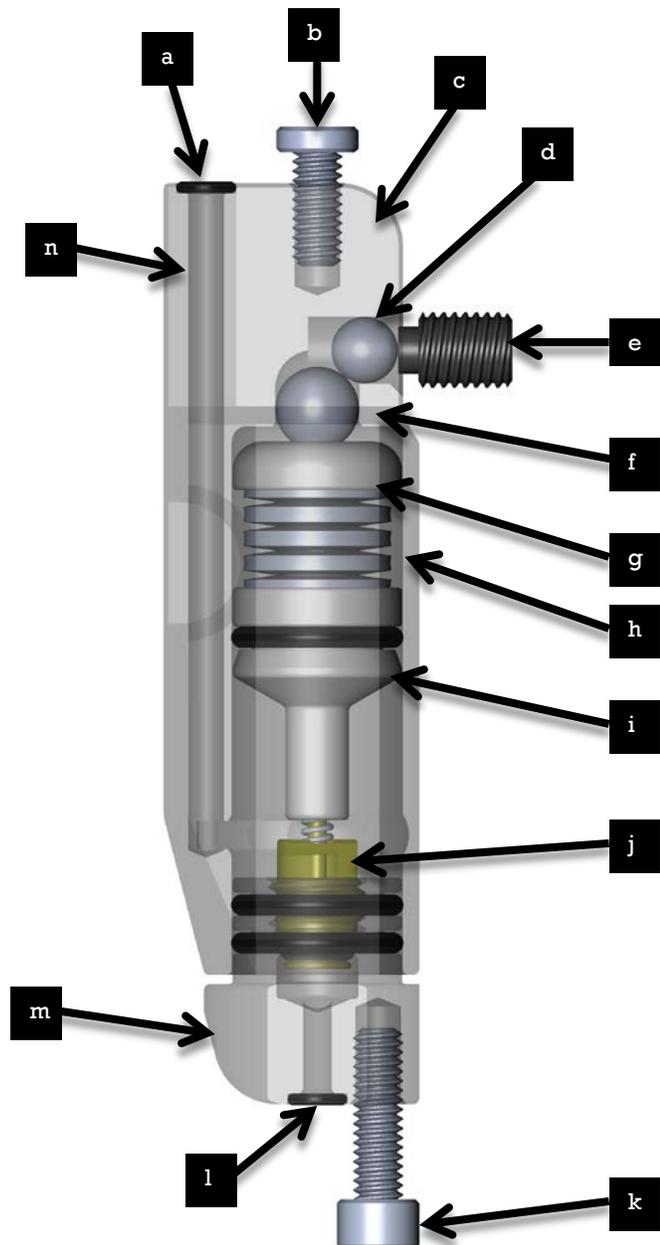


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Regulator – Transparent View

The MVP regulator builds on proven technologies from the Marq Victory series of markers. The new grip frame mounted design provides outstanding performance with low maintenance requirements.

- a) 1x3mm O-ring
- b) Top mounting screw
- c) Regulator body
- d) Small adjustment ball
- e) Adjustment Screw
- f) Large Adjustment Ball
- g) Spring Follower
- h) Spring Stack
- i) Piston with 013 O-ring
- j) Main Valve
- k) Lower Mounting Screw
- l) 1x3mm O-ring
- m) Regulator Cap with dual 013 O-rings
- n) Internal Air Passage



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O-Rings and Fasteners

O-rings

Part Name	Specifications	Quantity
Bottom Main Body to Pump Rail Track	1x3mm Buna Durometer 70	1
Regulator Upper to Grip Frame	1x3mm Buna Durometer 70	1
Regulator Lower to Grip Frame	1x3mm Buna Durometer 70	1
Cam Drive ASA Body to Grip Frame	1x4.5mm Buna Durometer 70	1
Spring Stack Retainer	1x5mm Buna Durometer 70	1
Outside of Blast Guide	1x7mm Buna Durometer 70	1
Outside of Poppet Seal	1x20mm Buna Durometer 70	1
Pump Rail Track to Grip Frame	1x23mm Buna Durometer 70	1
Inside of Breach (obsolete on new models)	1.5 x18mm Buna Durometer 70	1
Inside of Volume Chamber	011 Buna Durometer 70	1
Outside of Regulator Piston	013 Buna Durometer 70	1
Outside of Regulator Lower	013 Buna Durometer 70	2
Inside of Volume Chamber	020 Buna Durometer 70	1
Outside of Volume Chamber	021 Buna Durometer 70	2

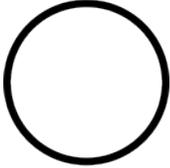
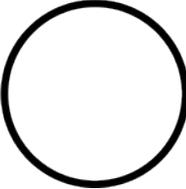
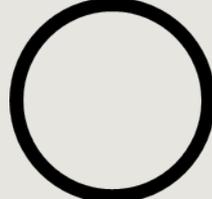
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Fasteners

Part Name	Specifications	Quantity
Roller Bearing to Pump Rail	M3 x 6mm Low Head Socket Cap Screw 18-8 SS	12
Roller Bearing to Trigger Assembly	M3 x 6mm Low Head Socket Cap Screw 18-8 SS	1
Roller Bearing to Sear Assembly	M3 x 6mm Low Head Socket Cap Screw 18-8 SS	1
Wrap Around Grip to Grip Frame	6/32 x 1/4" Low Head Socket Cap Screw 18-8 SS (Custom 5/64" Hex Drive)	6
Regulator Lower to Grip Frame	8-32 x 9/16" Socket Head Cap Screw 18-8 SS	1
Pump Rail Track to Grip Frame	8-32 x 3/8" Low Head Socket Cap Screw 18-8 SS (Custom 3/32" Hex Drive)	2
ASA to Grip Frame	8-32 x 3/8" Low Head Socket Cap Screw 18-8 SS (Custom 3/32" Hex Drive)	2
Grip Frame Assembly to Main Body	8-32 x 3/8" Low Head Socket Cap Screw 18-8 SS (Custom 3/32" Hex Drive)	2
Regulator Upper to Grip Frame	8-32 x 3/8" Low Head Socket Cap Screw 18-8 SS (Custom 3/32" Hex Drive)	1
Pump Handle to Pump Rail	10-24 x 3/4" Flat Head Socket Cap Screw 18-8 SS	2
Velocity Adjustment Screw	1/4"-28 x 3/8" Extended Point Socket Set Screw BO (Custom Nylon Patch)	1

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O-Ring Size Table

1x3mm		1x4.5mm	
1x5mm		1x7mm	
1x20mm		1x23mm	
1.5x18mm			
011		013	
020		021	

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Q&A

1. **Q:** Where can I get an o-ring kit?
A: Bob Long Technologies and authorized resellers have o-ring and parts kits available.
2. **Q:** I am seeing large velocity fluctuations – what should I do?
A: Check for a good paint to barrel match. Ensure the HPR spring stack is assembled correctly and that your ram, regulator, and poppet o-rings are lubed with Dow 55.
3. **Q:** How much oil should I put on the bolt?
A: Just a few drops on the bolt. Too much oil can cause bolt movement problems and dissolve the grease on the ball detent.
4. **Q:** What threading is the barrel?
A: Autococker
5. **Q:** Is the Stock trigger a roller bearing?
A: Yes
6. **Q:** What items are recommended to keep in my toolkit?
A: Each of the following:
 - Dow 55
 - Triflow oil
 - O-rings
 - One wooden chopstick (occasionally helpful for poppet or ram removal)
 - Standard (Imperial) Hex key set
7. **Q:** My feedneck isn't tightly clamping my loader- what should I do?
A: Use a hex wrench to tighten the adjustment screw.
8. **Q:** Where can I find additional information and other users of Bob Long Markers?
A: www.intimidatorowners.com also the PBNation subforums dedicated to Bob Long products located at <http://www.pbnation.com/forumdisplay.php?f=146>
9. **Q:** I need to ship my marker in for technical support – what is the address?
A: The address varies depending on whether shipping by postal service or another method.

USPS/postal shipping:

Bob Long Technologies
P.O. Box 457
Mokelumne Hill, CA 95245

Other shipping methods:

Bob Long Technologies
11669 Highway 26
Mokelumne Hill, CA 95245

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Troubleshooting Guide

Velocity is inconsistent over the chronograph	<ul style="list-style-type: none"> -Always check that your paintballs are of high quality, and consistent in size, as well as using a good paint to bore match -Make sure the regulator is set to the proper pressures
Marker is breaking paint	<ul style="list-style-type: none"> - Always check that your paintballs are of high quality, and consistent in size, as well as using a good paint to bore match -Make sure the regulator is not set to an excessive pressure -Ensure that your detent spring and bolt face are in good condition and there is no debris in the breech of the marker -Check the tension/pressure settings if you are using a force fed loader. Having too high of a feed pressure with fragile paint can cause balls in the stack to break
Marker does not gas up after tank is connected	<ul style="list-style-type: none"> -Verify that the pin valve on your tank is outputting pressure to the regulator - some tanks will not work properly with certain ASAs -Attempt gassing up the marker with another tank to see if this remedies the issue.
Marker is leaking from the ASA	<ul style="list-style-type: none"> -Check the tank O-ring (015 Urethane D90) for nicks or tears -Verify that the ASA is securely attached to the grip frame.
The Autotrigger is not functioning correctly	<ul style="list-style-type: none"> -Verify that the screws which hold the grip frame to the marker body are in place and snug
Marker leaks down the barrel	<ul style="list-style-type: none"> -Verify that the poppet seal, inner volume chamber o- ring, and blast guide are not scored or otherwise

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	damaged
Marker double feeds	-Verify that detent spring is in place, lubricated properly, and moves freely -Make sure you are not double pumping before pulling the trigger
What is the infinite loop reference item?	Post on the PBNation Intimidator forum and ask Gamer565 that question

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