

Users Manual

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06 Cyborg Users Manual Version 1.01

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Caution!

This is not a toy. Misuse may cause serious injury or death. Eye protection designed specifically for paintball must be worn by user and persons within range. Recommend 18 years or older to purchase. Persons under 18 must have adult supervision. **READ OWNER'S MANUAL BEFORE USING.**



Introduction

The 06 Cyborg is an open bolt, electropneumatic marker designed specifically for accuracy and speed. Your 06 Cyborg is built from precision machined components manufactured on some of the most sophisticated computer controlled machinery in the world today. This high quality construction, coupled with careful design by qualified engineers, results in a fast, accurate and reliable marker.

Specifications

Weight: 2.0lbs
Length: 9.25" (no barrel)
Height: 8.66" (no air source)
Width: 1.18"
Calibre: 0.68"
Power source: 9V battery
Gas source: Compressed air/N2 only
Barrel threads: Standard AutoCocker
Detent threads: Standard Autococker
Inline regulator: 04 Gladiator
Solenoid: Custom 5-way, 5V
Fire rate: true 34bps
Anti chop system: LED Break beam eye
Fire modes: Semi, PSP, NPPL, Millennium, CFOA, adjustable ramp
Operating pressure: 200psi



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Getting Started

Your Cyborg requires a source of Compressed air to be installed before use. The best air system to use with your Cyborg is the Conquest air system. However, thanks to the 04 Gladiator inline regulator, your Cyborg can accept air input from any air system supplying 400-900psi of compressed air (DO NOT USE CO2).

Mounting an air system

Two mounting holes are provided on the base of the Cyborg grip frame for the purpose of attaching your air system. Please see your air system users manual for details on how to attach your air system to these mounting points.

Connecting the gas

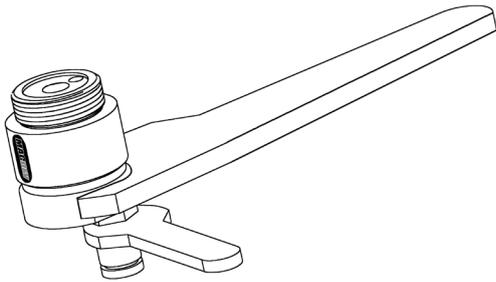
Now that your air system is mounted, you will need to connect the gas to the base of the Gladiator inline regulator. This is best achieved using MacLine (if you are using a air system output of 400-700psi) or braided hose (700psi+).

Your Cyborg comes from the factory with a MacLine fitting installed in the Gladiator. If you intend to use MacLine, then you can plumb your gun by pushing the MacLine from your air system into the fitting at the bottom of your Gladiator.

Your Cyborg is now ready to use. Screw the barrel into the Cyborg and carefully push a paintball hopper into the feed neck. Your Cyborg is now ready to operate. Never operate your Cyborg without eye, ear, mouth and neck protection for yourself and anybody within range.

If you need to change the fitting in the bottom of your Gladiator, please follow the instructions below.

Unscrew the bottom cap from your Gladiator (by hand). Use a wrench to hold the Gladiator bottom cap in place as you change the air fitting (as shown below). Do not over tighten the air fitting, and use a snug wrench on the Gladiator to prevent scratching. Now screw the Gladiator bottom cap back into the inline regulator.



Setting the Velocity

Your Sonic Cyborg has been factory set to between 275 and 300fps. The Sonic Cyborg should be adjusted to comply with local legal velocities. The Sonic Cyborg velocity can be adjusted over the chronograph with an allen key. First gas up your marker and check the gauge on the side (above the front grip) This gauge indicates the pressure setting of your inline regulator (Gladiator) and should be set to 200psi at all times.

Now chrono the marker, to increase the velocity turn the LPR adjuster clockwise, or turn the adjuster counter-clockwise to reduce the velocity. Never set the velocity over 300fps, or use/chrono your Cyborg without first ensuring that you and all other people in range are wearing appropriate protective clothing.

Operating Your Cyborg

Turning the power on and off

The Cyborg on/off switch is located on the underside of the trigger guard. Slide the switch to turn the marker on. When the Cyborg is on, the indicator LED on the side of the grip will ignite. To turn your Cyborg off, simply slide the switch in the opposite direction.

Deactivating the eye system

Your Cyborg has the eyes activated when you first turn it on. To deactivate the eyes, hold the trigger until the indicator LED begins to flash green.



Fine Tuning and Customising your Cyborg

Your Cyborg can be adjusted in many ways to suit your individual playing style. You can adjust the trigger feel, sensitivity and speed.

Trigger Adjustment

There are 3 set screws around the trigger area to use for fine tuning the trigger. The lower screw on the front of the trigger is used to adjust the length of the trigger pull - screw it clockwise to reduce the trigger pull length. The second, higher screw on the front of the trigger is used to adjust the actuation position. Screw this screw clockwise to actuate the microswitch earlier in the trigger pull.

The final adjustment screw is located on the top of the trigger - winding this screw in a clockwise direction will increase the trigger pull tension.

Programming Your Cyborg

The 06 Cyborg is equipped with trigger programming. To program your Cyborg, you must have the tourney lock disabled. The tourney lock is a dip switch on your circuit board, to disable the lock, switch the top dip switch to the left. To lock the programming, push the switch to the right.

To enter programming mode, hold in the trigger and switch the marker on. The indicator LED will flash blue and then solid green.

The Cyborg will now wait for you to select a register. To select the register you would like to change, pull the trigger the number of times indicated in the table below.

The indicator LED will now flash to indicate the current setting of the register you have selected. Once it has finished flashing, it will stay solid red. It is now waiting for you to input the new setting. Pull the trigger the number of times that you would like to input. Once you have finished, the board will flash twice and then return to solid green - it is now awaiting your next register input choice.

Please note that if you change register 1 (fire mode), the marker will exit programming mode automatically.

When you have finished changing register settings, you can exit the programming mode by turning the marker off. Also, if you have selected a register and do not want to change it, you may safely exit programming mode by turning the marker off.

Register Settings

1. Fire Mode

This register sets the mode that you would like the Cyborg to operate in. Please note that some modes are disabled in certain countries.

1. Semiauto
2. Auto response
3. Full auto
4. Semi2 (uncapped)
5. Assisted ramp (shots added based on rate of fire)
6. Fast ramp (shots added as soon as registers 5 and 6 are reached)
7. Triple shot ramp (3 shots added per pull when 5&6 are reached)
8. PSP1 (Assisted ramp PSP legal)
9. PSP2 (Fast ramp PSP legal)
10. PSP3 (Triple shot ramp PSP legal)
11. NXL

2. Rate of Fire

This is the fire rate cap - set this to stop your marker from cycling too fast.

3. Debounce

Use this setting to avoid the marker recognising false trigger pulls.

4. Dwell

This setting should not be adjusted unless you are advised by a MacDev tech.

5. AFA Rate of Fire - this is the rate of fire you need to achieve before ramping modes activate (fire modes 5-10)

6. AFA Shot Count - this is the number of shots you need to pull before ramping modes activate (fire modes 5-10)

7. Fire Holdoff - this setting should not be adjusted unless you are advised by a MacDev tech.

8. Eye Holdoff - this is the amount of time that the software will allow for the ball to settle in the breach. Faster hoppers use a lower setting. If paint breakage occurs try increasing this setting.



9. Anti Bolt Stick - this software option can alleviate problems with bolt stick by setting the time the software waits before applying anti bolt stick. setting 1 is off, whilst 2=5s, 3=10s, 4=15s etc.

10. Anti Bolt Stick Time - this is the amount of time added to the dwell to alleviate bolt stick.

11. Eye off rate of fire - 1=same as register 2, otherwise the setting indicates rate of fire.

12. Rate of fire additions - useful for fine tuning the rate of fire, 1=off, 2=0.2, 3=0.4 etc

16 and 17 are used to combat mechanical bounce. If mechanical bounce becomes a problem, try increasing 17 (AMB). Warning increasing this setting too much may result in slow rates of fire.

Register	Description	Default
1	Fire Mode	1
2	Rate of Fire	30
3	Debounce	10
4	Dwell	10
5	AFA Rate of Fire	5
6	AFA Shot Count	3
7	Fire Holdoff	15
8	Eye Holdoff	5
9	Anti Bolt Stick	1
10	Anti Bolt Stick Time	1
11	Eye off rate of fire	1
12	Rate of Fire Additions	1
13	Disable Eye Through Trigger (1=on, 2=off)	1
14	Clearing Shot (1=on, 2=off)	1
15	not used	-
16	Ebounce2	10
17	AMB	10

Caring for your Cyborg

The Cyborg is a very low maintenance marker, however there are some things that you can do to keep it running at optimum performance. Always use Dow 33 to lubricate your Cyborg, do not use Silicone spray or oil of any kind.

Bolt Maintenance

The Sonic Cyborg bolt is made from a very high quality self lubricating plastic with three wiping O-rings. These wiping O-rings should be kept clean and oiled. During normal usage, the Cyborg bolt can become dirty. To remove the bolt, gently pull the pull pin upwards until it clicks. The bolt and pull pin should then slide freely out of the gun. Clean the bolt with a clean, dry soft cloth. If you notice scratches along the bolt, it is likely that you have not cleaned it often enough - it is a good idea to clean the bolt after every days play, or if it gets excessive paint/dirt in it during the course of play.

When replacing the bolt, it is critical to ensure that the bottom of the pull pin is located correctly in the slot on the ram inside the gun. If the bolt is incorrectly installed your Cyborg will not operate correctly and damage may result.

Ram Maintenance

The ram of your Cyborg does the most work of any part of the gun. For this reason the ram system needs to be kept clean and well lubricated. Before removing your ram ensure that there is no gas in the gun. First remove the bolt (as described above in bolt maintenance) and unscrew the ram cap (counter-clockwise) and remove it from the gun. Then grasp the ram end and pull it out of the Cyborg. Now remove the hammer from the ram housing. Clean the old grease off the ram housing bore using a clean q-tip, and clean the old grease from the ram housing and hammer using a clean lint free cloth. Use a clean q-tip to re-lubricate the bore of the ram housing with Dow 33, and use your finger to re-lubricate the o-rings on the hammer as well as the hammer shaft. Slide the hammer back into the ram housing and re-lubricate the o-rings on the outside of the ram housing. Now your ram is ready to be replaced back into the marker - slide it back in carefully before securing it in place with the ram nut. Take care that the bolt is replaced correctly as described above in bolt maintenance.

Ram maintenance can be performed as often as you like, and should be done at least every 20,000 cycles.



Gladiator Inline Regulator Maintenance

To keep your Gladiator working well you should clean and lubricate the piston regularly (at least every 20,000 shots or so, you may perform this maintenance more often if desired). To do this follow these easy steps:

1. Degas the Cyborg of all pressurised gas, then remove the Gladiator from the Cyborg. Unscrew the Gladiator bottomworks and put it aside.
2. Place a clean rag on the tabletop and push the piston assembly out from the top. Separate the piston from the o-ring retainer and spring washers.
3. Clean the piston, o-rings and o-ring retainers of old grease using a clean rag, do not leave any lint or cotton strands on or between the o-rings. Re-apply Dow 33 to the o-rings.
4. Clean the piston bore using a Q-tip to remove all old grease.
5. Using a clean Q-tip, apply grease to the piston bore. Do not over apply grease - all you need is a thin film.
6. Slide the spring washers back onto the piston and lubricate the shaft with Dow 33. Now slide the upper o-ring retainer back onto the shaft. Push the inner retainer o-ring over the shaft and position the outer retainer o-ring in the groove. Now slide the lower o-ring retainer over the shaft to sandwich the o-rings in place.
7. Slide the piston etc back into the Gladiator topworks and screw the bottom and topworks back together before re-installing the Gladiator onto your Cyborg.

LPR Maintenance

The LPR should be cleaned and re-lubricated at the same time as the Gladiator inline regulator. Remove the adjuster cap by unscrewing it from the LPR (counter-clockwise), and remove the spring under the adjuster. Use a pair of needle nosed pliers to remove the LPR piston. Clean and relubricate the piston bore using a q-tip then clean and relubricate the piston itself before replacing it back in the LPR body. Replace the LPR spring and adjuster cap. You will need to re-chrono your marker after doing this.

Troubleshooting

Some common difficulties are detailed in this section, for the latest troubleshooting information, please visit www.macdev.net. If you require more assistance with troubleshooting related issues, please contact your local macdev/Cyborg tech.

The marker is on, but will not cycle

Ensure that the paint is loaded correctly and that there is gas to the marker. If paint is loaded correctly, point the Cyborg at a safe target and hold the trigger for at least half a second. If the marker cycles then paint was not loaded correctly.

Check that the trigger actuator adjustment is not set too far in or too far out (always back the adjustment out before trying to screw it in, because screwing it in too far may damage your trigger switch).

There is a leak from the marker

Check the gauge on the side of the gun. It should be set to approximately 200psi. If the Gladiator needs adjustment, then adjust the pressure (using a 3/32" allen wrench on the bottom of the Gladiator - counterclockwise increases pressure). Then re-chrono the marker - the leak should disappear when the velocity is set correctly.

If the leak persists check the ram switching o-ring to ensure it is not dry or damaged. If the leak still will not disappear, please contact tech. support.

The marker breaks paint

Ensure that the top tube, bolt and barrel of your Cyborg are completely clean. Check to make sure that the paint is not too large for the Cyborg barrel. Ensure that your anti chop eyes are turned on and the barrel is screwed in completely.

The marker shoots down under rapid fire

Check to make certain that your air system is set to 400psi or above. When firing the gun ensure that the gauge on the side of the gun recharges quickly (if this recharges slowly, perform routine Gladiator inline reg maintenance). If the air system is set correctly and the gauge on the side of the gun recharges well, perform routine maintenance on the Cyborg ram and LPR.



06 Cyborg Schematic

This schematic does not show all Cyborg parts. Some parts have been omitted for clarity.

Circuit Board Wiring

