



NEMESIS™

operation manual



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 2. The hopper is made of
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 1000 rounds of paintballs.
 3. The trigger is made of
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 4. The pump handle is made
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Included with the Nemesis:

- Deluxe Carrying Case
- 12" 2 piece ported barrel
- 1 Tube 10 ml Ambrosia HP (55) O-Ring Lubricant
- 1 Complete O-Ring Kit including ball detents and ram bumper (Poppet not included)
- Assemblies and Parts; open page 7 for the details

:: NOTE ::

The Nemesis uses metric screws – metric hex wrenches are required for disassembly



OPERATION MANUAL

LIABILITY STATEMENT

CY-Paintball ships its marker with the user, distributor and sales agent understanding that CYP will not accept any responsibility for its handling and use in public or private. The user accepts this sole liability when purchasing and using any marker sold or produced by CY-Paintball. CY-Paintball disclaims any implied warranties or any responsibility for any errors that may appear in the manual.

Even if all safety rules are adhered to and proper equipment is worn, CY-Paintball limits its liability solely and strictly to the replacement of the marker. If, as the user of the marker, you do not accept total liability, CY-Paintball requests that you do not use our paintball marker. You are not allowed to use this marker unless you accept all liability and release CY-Paintball of all liability through any use or misuse thereof.

By using the paintball marker you will release CY-Paintball of any and all liability associated with its use.

:: CAUTION ::

The paintball marker you have purchased is not a toy. It is imperative that it is used responsibly and under adult supervision or by adults only. When using the marker, adhere to all local, state and federal laws. Read the entire manual before using this marker. Failure to comply with the instructions in this manual may nullify your warranty.

SAFETY FIRST!

Paintball is a sport, which almost all ages can enjoy. It is recommended that users be at least 18 years of age to purchase the NEMESIS, 14 years old to use under adult supervision or 10 years old to use on paintball fields meeting ASTM standards F-1777-97.

Always treat the paintball marker as if it were loaded. When handling the marker, always keep your fingers or any other objects away from the trigger assembly to avoid accidental discharges.

Make sure to keep the barrel pointed downward when carrying or transporting the marker. Always have a barrel-blocking device in place and remain the power switched off until you are ready to operate the marker.

It is very important to have the proper protection before going to the paintball field for play. This includes, and is not limited to: eye, head, throat and body protection. All protection used should be designed for paintball, e.g.: goggles designed specifically for paintball usage.

Unfortunately, paintball is not a recognized sport in all countries and may be restricted in some areas. If you plan to travel with your marker, make sure you adhere to all laws and regulations to avoid unnecessary trouble.



OPERATION MANUAL

NEMESIS INTRODUCTION

Thank you for using CYP paintball products. The Nemesis is a solenoid controlled open bolt design. The bolt is locked into a dual pressurized machined ram. The back of the chamber is pressurized to move the bolt forward, and the front is pressurized to move the bolt backward. This allows for a very low cycling pressure (under 90psi), as well as minimal recoil. An electronic 5-way solenoid valve controls the ram.

We are confident that the Nemesis is one of the most sophisticated electronic markers you can find on the market. A dual-sided Infraeye system is integrated into the body and minimizes ball breakage. Power is supplied from a 9V alkaline battery that is housed in the grip frame. The dwell time is fully adjustable by a tournament legal semi auto board that allows a fire rate up to 30 bps. The Nemesis operates with CO₂ or HPA / N₂.

CYP markers are manufactured with precision and passion to provide the highest level of craftsmanship. Our goal is to provide safety and high performance through superior quality. Each marker is fully inspected before it leaves the factory. CYP thanks you for using one of our products - we hope you have a lot of fun with the Nemesis and we wish you a successful season played safely and fairly!

POWER SUPPLY

A replaceable 9V battery (not included) powers the Nemesis electronics. It should last for approximately 20'000 shots. Alkaline batteries are recommended. Rechargeable batteries may last less than the above described number of shots.

CO₂ -Tanks

To use CO₂, the tank needs to have an anti siphon tube that is correctly fitted to the Nemesis. The anti siphon tube prevents liquid CO₂ from entering the marker. If your CO₂ tank does not have an anti-siphon tube, have a certified airsmith install one onto your tank. Do not disassemble a CO₂ tank or install an anti siphon tube yourself.

HPA/ N₂ Tanks

HPA or N₂ tanks should provide air regulated at a maximum of 900 psi when using the inline regulator. HPA or N₂ tanks must be able to provide a high volume of air regulated at 220-300 psi if the inline regulator is not used (i.e. if the output from the air tank is connected directly to the vertical ASA). See the Regulators section for details.

EQUIPMENT

Barrels

If the stock barrel does not suit your needs, there are many aftermarket barrels available - make sure you purchase a cocker threaded barrel. Do not force the barrel into the body threads if the barrel binds, as it may not be threaded correctly.

Loaders

We recommend you to use a motorized loader, as the Nemesis needs a high flow of paintballs to assure a sustained high rate of fire. There are several kinds on the market - the choice is yours. Make sure the loader fits into the feed neck securely.



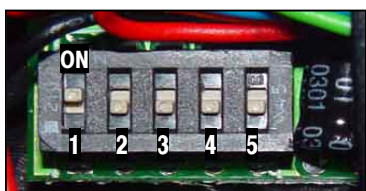
FUNCTIONS and SETTINGS

Light Emitting Diode (LED)

When switching Nemesis on, the LED on the right side of the body will flash up and it indicates the mode that has being activated or the status of the power supply:

- Flashing red LED: indicates the Infraeye system is activated
- Flashing green LED: indicates the Infraeye system is inactive
- Flashing orange LED: indicates low battery

Dual In-Line Package Switch (DIP Switch)



- The settings as shown effect:
- ⇒ Infraeye: on
 - ⇒ Forward dwell time: 5 ms
 - ⇒ Ball in breech delay: 1 ms
 - ⇒ Fire rate: 30,4 bps

Access the DIP Switch, by loosening the 4 M4 retaining screws (#59-1f on the schematic) and removing the rubber grip cover (# 49-1) the switches are located at the base of the circuit board.

DIP Switch Settings I: Infraeye Active

Switch 1 ⇒ on ⇒ Infraeye

Switch 2	Switch 3	Forward Dwell [ms]	Switch 4	Switch 5	Ball in breech [delay ms]	Max Fire Rate [ms]
off	off	5	off	off	1	30
off	on	6	off	on	2	26
on	off	8	on	off	3	22
on	on	10	on	on	4	18

DIP Switch Settings II: Infraeye Inactive

Switch 1 ⇒ off ⇒ Infraeye

Switch 2	Switch 3	Forward Dwell [ms]	Switch 4	Switch 5	Max Fire Rate [ms]
off	off	5	off	off	14
off	on	6	off	On	12
on	off	8	on	off	10
on	on	10	on	On	8



REGULATORS AND PRESSURE SETTINGS

Low Pressure Regulator

The low pressure regulator at the front of the marker adjusts the pressure supplied to the ram. It is set at the factory to 80-90 psi. Fine velocity adjustments can be made via the low pressure regulator by turning the (# 1a) set screw clockwise or counter clockwise with a 10mm hex wrench. If you set the pressure to high, the marker will have more "kick", therefore setting the pressure as low as possible is recommended.

High Pressure Regulator

The high pressure regulator adjusts pressure supplied to the gun's exhaust valve. The operating pressure should be set between ~220-300 psi, depending on the desired velocity. Coarse velocity adjustments are made here.

Increasing the Pressure on your HP Regulator

1. Turn the (# 1b) setscrew clockwise with a 10mm Allen wrench at the bottom of the regulator.
2. Fire 3-5 shots to let the regulator shift to the new pressure and then chronograph the marker.
3. Adjust the regulator until you achieve the desired pressure.

Decreasing the Pressure on your HP Regulator

1. Turn the set screw counter-clockwise.
2. Fire 3-5 shots to let the regulator shift to the new pressure and then chronograph the marker.
3. Adjust the regulator until you achieve the desired pressure.

Input Pressure from the Tank

We recommend 450 to 500 psi, as input pressure from the tank to the HP regulator. Most presets are around 800 to 850 psi. Therefore, the use of an external regulator is recommended. To achieve a proper operation of the marker set the input pressure from the tank to approx. 500 psi.

MAINTENANCE

Do not use any light weight oil or petroleum based lubricants as it may destroy some internal seals. We strongly recommend the use of silicone-based lubricants to maintain your marker. Coat all internal O-rings with a thin layer of Ambrosia HP (55) Lubricant. The poppet and ram O-rings need to be greased between 2000-3000 shots with a Lubricant such as DOW33. Regulator O-rings should be greased every 5000 shots.

In general, we recommend greasing the O-Rings before every day you're playing. Obey these recommendations and your marker will last longer and operate at peak performance.

:: IMPORTANT! READ THIS BEFORE DISASSEMBLY ::

Before disassembling your marker, remove the air supply and dry fire to depressurize it. Wear all necessary protective equipment while doing so. Familiarize yourself with the marker schematics before starting disassembly.

Always take note of how internal parts are assembled. Avoid the use of tools or objects with sharp edges or surfaces when maintaining the marker. Damages on parts, even if they appear to be slightly, can cause a significant lost of accuracy and / or performance. Damages due to improper handling or maintenance of your marker may void the warranty.



OPERATION MANUAL

Removing and Lubricating the Ram O-Ring and Poppet

Step 1 - 2

Fig. 1.1 Pull the bolt pull pin (# 47 on the schematic) all the way up and pull the bolt out the rear of the marker **Fig. 1.2**.



Fig. 1.1



Fig. 1.2

Step 3 - 4

Fig. 2 Remove the sleeve cap (# 45) from the rear of the ram. **Fig. 3** By tilting the marker back, the ram (# 38) will fall out of the rear – make sure the ram doesn't fall onto a hard surface.



Fig. 2



Fig. 3

Step 5 - 6

Fig. 4 To remove the poppet, the grip frame and vertical adapter need to be removed. Start by removing the vertical (HPA) regulator. **Fig. 5** Then, loosen and remove the two grip frame screws:



Fig. 4



Fig. 5



OPERATION MANUAL

Step 7 - 8

Fig. 5 Once the frame is free from the body, detach the clear hose from the barb fitting on the vertical adapter. **Fig. 6** Now, use a 5mm hex socket to remove the hose barb:



Fig 5



Fig 6

Step 9 - 10

Fig. 7 At this point the base retaining screw (# 61) can be removed. **Fig. 8** The vertical adapter can then be pulled out of the front of the body:



Fig. 7



Fig. 8

Step 11 - 12

Fig. 9 The valve spring and cup seal can be removed from the front of the valve chamber and the poppet can be removed by a gentle tap on the body or by carefully using a pair of needle nose pliers or tweezers. Do not force the poppet out, and avoid damaging the sealing lip of the poppet.



Fig. 9



Fig. 10

Fig. 10 Apply a light coat of DOW 33 grease to the ram, ram O-ring and poppet use the included Ambrosia HP (55) Lubricant on all other O-Rings if necessary replace the ram bumper and O-rings. Before reassembling the marker make sure when assemble the marker that all prior removed parts are re-assembled in the right order and direction.



OPERATION MANUAL

Lubricating the Piston O-Ring / Regulator disassembly

Step 1

Remove both HP-Regulator **Fig. 1.1** and LP-Regulator **Fig. 1.2** from the regulator base.



Fig. 1.1



Fig. 1.2

Step 2

Fig. 2 Remove the velocity adjuster from the HP Regulator and/or LP Regulator (# 1a/# 1b) with a 10mm hex wrench.



Fig. 2

Step 3

Now unscrew the regulator housing Fig 3 of the HP Regulator **Fig. 3** and LP Regulator **Fig. 4**



Fig. 3



Fig. 4



OPERATION MANUAL

Step 4-5

Fig. 5 The piston (LP Regulator #5 a / HP regulator # 5b) can now be removed from the bottom regulator housing. **Fig. 6** Clean the piston with a tissue or a clean rag and remove all residues of the old lubricant coating. If necessary replace the piston O-Ring (LP regulator # 6a / HP regulator # 6b) and all other remaining O-rings on the Regulator.



Fig. 5



Fig. 6

Step 6

Fig. 7 Now lubricate the piston O-Ring with a light coat of Ambrosia HP (55) lubricant.



Fig. 7



Fig. 8

Step 7 Reassembly

Make sure that all parts are assembled in the correct order (and are aligned correctly). Make certain when inserting the piston that the indentation on the smaller side of the piston **Fig. 8** is facing towards the pin valve. If the piston is inserted backwards, it may damage the pin valve when assembling the regulator.

Cleaning the Infraeye system

Remove the left and right eye cover (# 29 and # 30 on the schematics) by loosening the retaining screws (# 60c) with a 3mm hex wrench. Remove the Infraeye carefully from the slot while making sure that you don't lose the O-rings (# 34g). Clean the surface with a soft cloth or q-tip (you can use Isopropyl alcohol or pure alcohol). Re-assemble when done. Make sure the eye sits correctly in the slot and do not over tighten the retaining screws (# 60c).

General Body Cleaning

The Nemesis body and outer surfaces can be cleaned with a water/alcohol mix applied to a rag or cloth. Do not immerse the marker in any liquid.



ADJUSTMENTS

Trigger Adjustment

If the factory settings don't satisfy you, the trigger can be adjusted by adjusting the three setscrews on the trigger with a 2mm hex wrench. There are no optimal settings, as everyone has a personal preference for the feel of the trigger pull.

The three screws on the trigger will affect:

- I) Adjusting this screw will set the spring tension. The spring tension affects the return pressure after the trigger has been pulled. When tightening the screw (CW) the spring tension will increase; when loosening the screw (CCW) it will decrease.
- II) This screw sets the actual distance between the trigger and the microswitch; it is the direct interface between the trigger and the switch. Tightening (CW) the screw will result in an earlier contact. Do not over tighten the screw as you may damage the microswitch.
- III) The bottom screw is the trigger stop - this adjusts the total distance the trigger will travel. Tightening the screw (CW) will decrease the trigger travel and loosening will increase (CCW) it.



Recommendations for the adjustment of the trigger:

Step 1 Trigger Stop

First, adjust the screw on the bottom (III) until you find the desired trigger stop.

Step 2 Trigger Pull

Then adjust the screw in the middle (II) and tighten or loosen slowly and carefully. Pull the trigger each time you have adjusted the screw. Listen for the clicking of the microswitch, and make sure the switch clicks reliably on each pull. If you tighten the screw too much, the switch won't activate and you may even damage the microswitch. Perform this step slowly and carefully. If you want to set the trigger as short as possible, adjust for the shortest pull and then loosen the screw (CCW) just a little to ensure that the microswitch always engages fully.

Step 3 Spring Tension

Now adjust the spring tension (I) until the trigger is as soft or hard as you'd like.

After you have adjusted the trigger, it is recommended that you test the new settings by either dry firing or firing your marker with paintballs. Do not rely only on listening to the clicks of the microswitch – actually firing the gun is the best way to ensure that the trigger is set correctly.



OPERATION MANUAL

TROUBLESHOOTING

NOTE

Most problems are due to worn O-rings or other soft parts. Once again, do not use lightweight oil or petroleum based lubricants. We recommend using silicone-based lubricants.

1.0 Velocity Problems

- 1.1 **High velocity**; Decrease velocity, see the section on regulators.
- 1.2 **Low velocity**; Poppet out of lubricant, grease the poppet O-ring.
Increase velocity (see the section on regulators).
- 1.3 **Inconsistent velocity**; HP regulator is lack of lubrication. Apply lubricant to the HP pressure regulator piston O-ring (# 6a / see maintenance).
Large ram O-ring is worn. Replace O-ring (#40 / see maintenance).
HP-regulator wrong connected; Check if the gas line is not connected to the gauge port on the HP-regulator.
Dirt or debris is stuck inside the solenoid at the same time you will hear that gas which is leaking out of the overpressure relief. However, do not attempt to clean the solenoid by yourself as it can be easily damaged. Contact a technician or ask your dealer.

2.0 Air Leaks

- 2.1 Leaks down the barrel; Replace the poppet (#35) and/or cup seal O-ring (#34e).
Gas is leaking out the solenoid. (See above)

3.0 Marker won't fire

- 3.1 Low battery; Replace battery.
AC hose crimped or dirt stuck inside. Check and replace the AC hose if necessary.
Solenoid inoperable (see above)
- 3.2 The marker cycles but doesn't fire; Increase the pressure of the HP regulator.

4.0 Other possible Problems

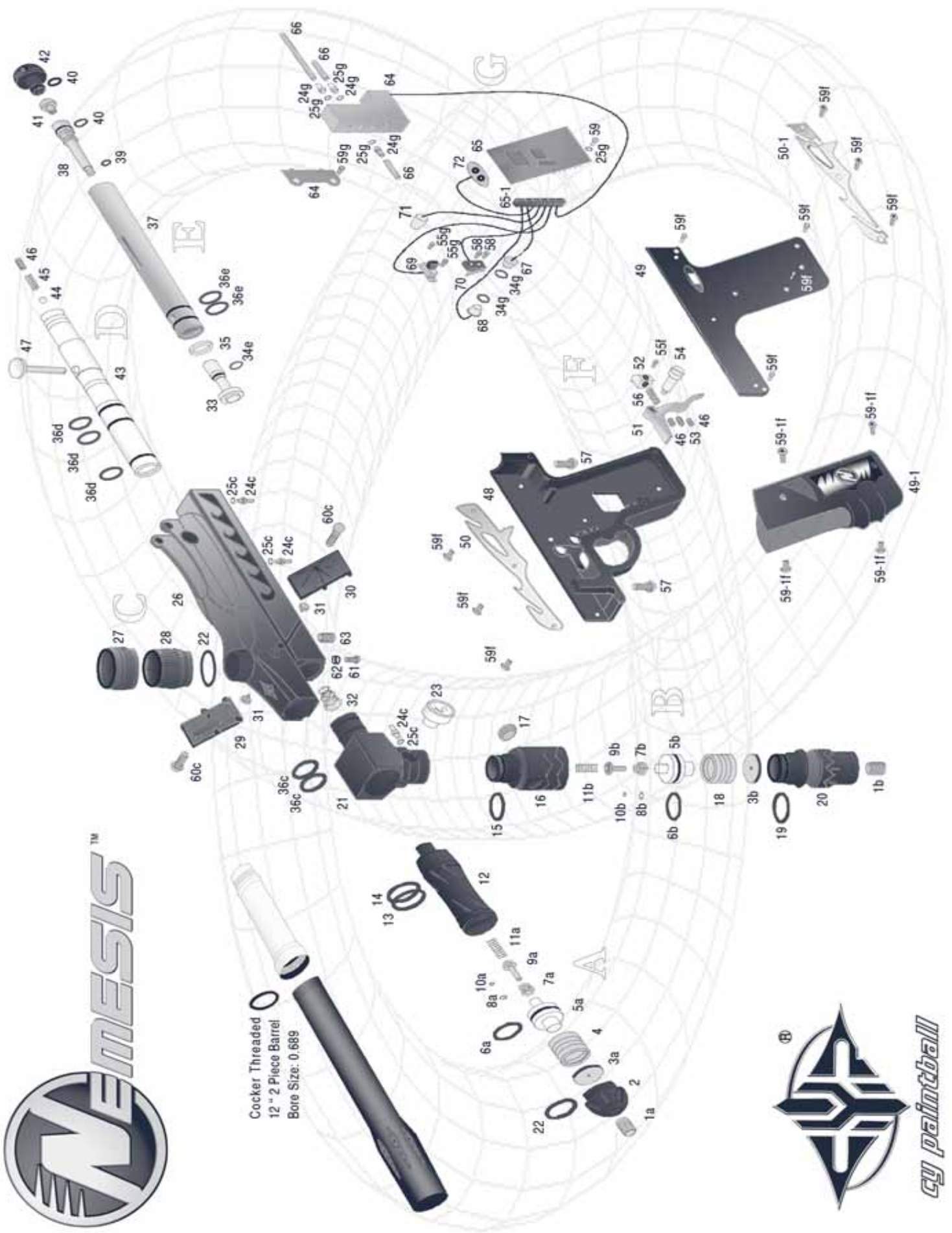
- 4.1 Retaining screw for circuit board is shorting out board. Remove retaining screw and install a fiber washer or an O-ring between the screw and board. Ensure that the screw does not touch the board when re-installing the circuit board.
- 4.2 Infraeye system performs inconsistently; replace a new bumper (# 41).
- 4.3 Infraeye system don't work; Check if the eye is free from dirt and debris and clean it.
Check all wire connections ensure they are connected correctly and not loose.
- 4.4 Sleeve is moving rearward, replace sleeve O-rings (# 36e)

ONLINE SUPPORT

Online support is available for registered users with a valid serial number. Take a few minutes to fill out the warranty card and send it to us along with a copy of a valid receipt of purchase. Please fill out the inquiry form on www.cypaintball.com to receive online help. Updated and upgraded versions of the Nemesis manual can be downloaded from our website.



Cocker Threaded
12" 2 Piece Barrel
Bore Size: 0.689



cy paintball

NEMESIS PART LIST and ASSEMBLY OVERVIEW

A LOW PRESSURE REGULATOR

No.	Part Description	Pcs.
1a	Velocity Adjuster (M10x15)	1
2	LP Regulator Housing	1
3a	Spring Base	1
4	Spring	1
5a	Piston	1
6a	#113 N70 O-ring	1
7a	Pin Valve Base	1
8a	#010 N70 O-ring	1
9a	Pin Valve	1
10a	#006 PU90 O-ring	1
11a	Pin Valve Spring	1
12	LP Regulator Body	1
13	#020 N70 O-ring	1
14	#116 N70 O-ring	1

B HIGH PRESSURE REGULATOR

1b	Velocity Adjuster (M10x15)	1
3b	Spring Base	1
5b	Piston	1
6b	#113 N70 O-ring	1
7b	Pin Valve Base	1
8b	#010 N70 O-ring	1
9b	Pin Valve	1
10b	#006 PU90 O-ring	1
11b	Pin Valve Spring	1
15	#015 PU O-ring	1
16	Top HP Regulator Housing	1
17	Hex Nut	1
18	Spring	1
19	#018 N70 O-ring	1
20	Bottom HP Regulator Housing	1

C MAIN BODY and REGULATOR BASE

21	Regulator Base	1
22	17. 91x1. 17 N70 O-ring	1
23	Pressure Gauge (300psi)	1
24c	Barb Fittings	3
25c	Fiber Washers	3
26	Main Body	1
27	Clamping Vertical Feed Cover	1
28	Clamping Vertical Feed Tube	1
29	Left Infra-eye Cover	1
30	Right Infra-eye Cover	1
31	Ball Detent	2
32	Cup Seal Spring	1
36c	#015 N70 O-ring	1
60c	M3x10 Screw	2
61	Base Retaining Screw	1
62	M5 Washer	1
63	Retaining Allen Screw	1

D HIGH FLOW DELRIN BOLT

No.	Part Description	Pcs.
36d	#015 N70 O-ring	1
43	Delrin Bolt	1
44	Stainless Steel Ball	1
45	Spring	1
46d	M4x6 Set Screw	1
47	Stainless Steel Pull Pincoated)	1

E RAM

33	Cup Seal (Titanium coated)	1
34e	#004 N70 O-ring	1
35	Poppet	1
36e	#015 N70 O-ring	2
37	Ram Sleeve	1
38	Ram (Titanium coated)	1
39	#006 N70 O-ring	1
40	#011 N70 O-ring	1
41	Bumper	1
42	Sleeve Cap	1

F GRIP FRAME

46f	M4x6 Set Screw	2
48	Aluminum Grip Frame	1
49	Frame Plate Cover	1
49-1	Rubber Grip Cover	1
50	Frame Cover (Left)	1
50-1	Frame Cover (Right)	1
51	Trigger	1
52	Spring Base	1
53	M4x10 Set Screw	1
54	Screw	1
55f	M2x5 Screw	1
56	Trigger Spring	1
57	M5x30 Screw	2
59f	M3x5 Screw	10
59-1f	M4x5 Screw	4

G CIRCUIT BOARD and SOLENOID

34g	#004 N70 O-ring	2
64	Solenoid	1
65	Circuit Board Set	1
65-1	Board Connector Female	3
66	AC Hose	3
67	Infraeye (Left)	1
68	Infraeye (Right)	1
69	On / Off - Switch	1
70	Micro switch (Trigger)	1
71	Light Emitting Diode	1
72	9V Battery Connector	1

WARRANTY

CY-Paintball warrants the replacement of any original Nemesis marker part due to a defect in the material and/or workmanship. The warranty period is effective for 12 months for parts and labor, except electronic parts, which have 30 days. It becomes effective from the date of purchase and is valid with a receipt of sale. The warranty card must be filled out and returned within 30 days of purchase to be valid. All warranty repairs will be performed only if the warranty card is filled out and is on file with CY-Paintball. A photocopy of the sales receipt must be included with the warranty card. All other services will be charged for and returned via common mail carrier. Payment may be made in advance or shipment will be returned C.O.D.

CY-Paintball will replace any part determined by CY-Paintball to be defective, under the terms of this warranty. Any improper operation of the marker that has been considered a result of, but not limited to, abuse, neglect, and normal wear, improper maintenance or accidental mishaps, or not using original parts (or parts not intended for this marker) is not covered by this warranty. CY-Paintball always reserves the right to judge what will be covered by warranty.

No other warranties or guarantees, expressed or implied, are made by CY-Paintball. The sole and exclusive liability of CY-Paintball, or its authorized dealers, affiliates, or agents pursuant to this to this warranty will be solely limited to repair or replacement of the defective parts.

Once again, CY-Paintball always reserves the right to judge what will be covered by warranty. Other incidental or consequential damages are expressly excluded hereunder. CY paintball, and its authorized dealers, agents, or affiliates will not be liable under this warranty, nor under any local, state or federal law, or common law or otherwise, for any damage or failure, including personal injury, resulting from misuse, normal use, accidental discharge, alteration or any other possible acts.

Warranty service is available by sending your Marker to:



CAREYU CORP.
(DBA CY-PAINTBALL)

P.O. BOX 36-345
Taipei
Taiwan 105

Fax: +886 2 25 77 17 00
Phone: +886 2 25 77 00 82
Email: info@cypaintball.com



Find the closest warranty repair and servicing centre next to you on www.cypaintball.com or contact us.