

THE PERFECT GAME. THE PERFECT MARKER.

MARS · EVO

FULL-AUTO ELECTRONIC MARKER



WARNING

ARMOTECH PAINTBALL MARKERS ARE NOT A TOY. ANY MISUSE MAY CAUSE SERIOUS INJURY OR DEATH. THE USER AND ANY PERSON WITHIN RANGE MUST WEAR EYE PROTECTION DESIGNED FOR PAINTBALL USE. READ THIS OWNER'S MANUAL COMPLETELY BEFORE LOADING, PRESSURIZING, OR OPERATING YOUR ARMOTECH PAINTBALL MARKER.

This paintball marker is intended for sale to adults only, for use in compliance with all applicable laws and regulations. Adult supervision is recommended at all times whenever a minor is handling this paintball marker. All persons within range MUST wear protective goggles & headgear specifically designed for paintball when a paintball marker is in use. Paintball safety rules must be followed at all times.

Tactical Markers – Paintball Markers, Equipment, Supplies
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online help forum <http://team.tacticalmarkers.com/board/>



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This owner's manual is provided with several models of the MARS series paintball marker. Armotech Inc reserves the right to modify or change its markers without incurring any obligation to incorporate such modifications or changes in any of its products that were sold prior to the modification. The information in this owner's manual may be updated or changed without notice.

This owner's manual is intended to remain with the paintball marker upon any subsequent transfer of the marker, whether through sale, resale, or furnishing in any manner.



Paintball Safety Rules



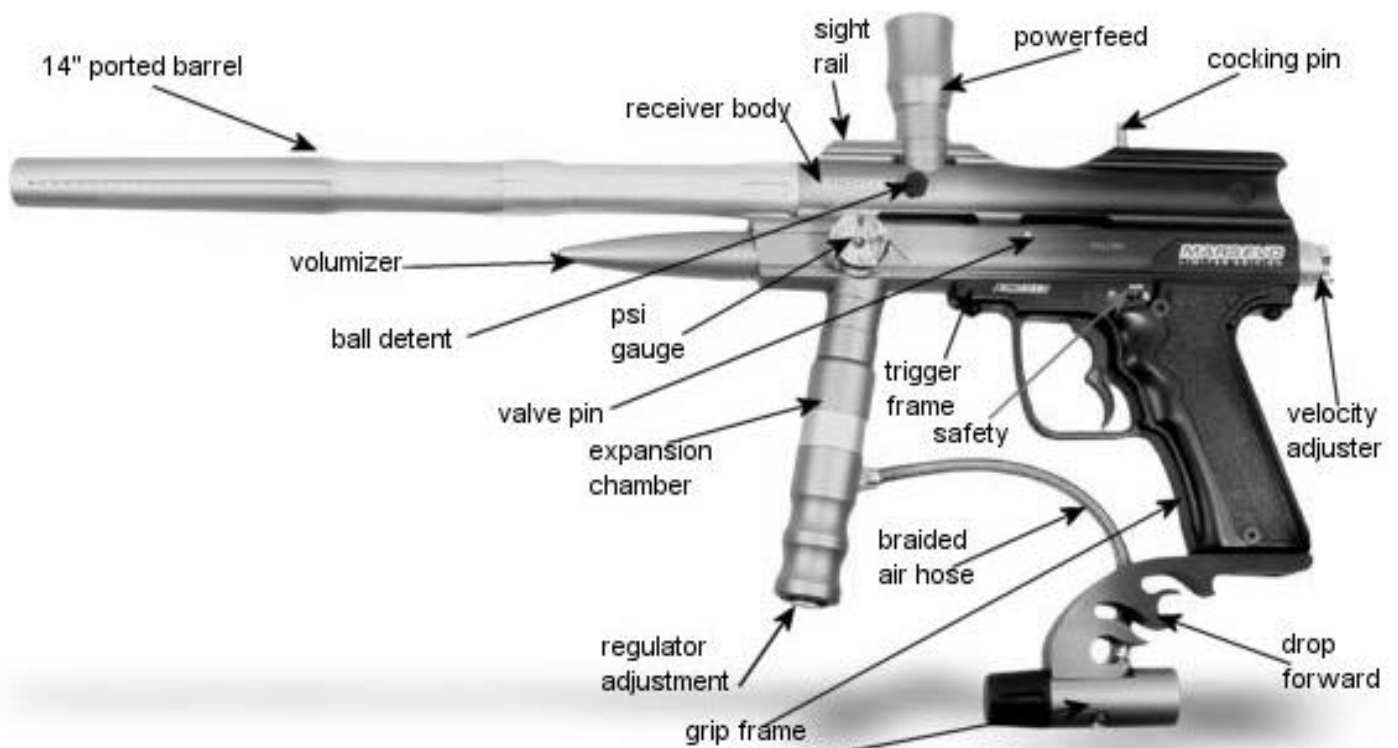
Safety First!

WARNING

ARMOTECH PAINTBALL MARKERS ARE NOT A TOY. ANY MISUSE MAY CAUSE SERIOUS INJURY OR DEATH. THE USER AND ANY PERSON WITHIN RANGE MUST WEAR EYE PROTECTION DESIGNED FOR PAINTBALL USE. READ THIS OWNER'S MANUAL COMPLETELY BEFORE LOADING, PRESSURIZING, OR OPERATING YOUR ARMOTECH PAINTBALL MARKER.

- Always wear protective goggles & headgear designed for paintball when shooting this marker
- Everyone within range of an area where this paintball marker is used should wear protective goggles and headgear specifically designed for paintball
- Operate this paintball marker only in areas where it is safe and lawful to do so
- Misuse of this marker may result in criminal charges or imprisonment
- This marker is intended for sale to adults. Adult supervision is recommended at all times whenever a minor is handling this marker
- READ THIS OWNER'S MANUAL COMPLETELY BEFORE LOADING, PRESSURIZING, OR OPERATING THE ARMOTECH MARS SERIES PAINTBALL MARKER!
- Never aim or shoot this paintball marker towards anybody who is not wearing protective goggles or headgear specifically designed for paintball

- During game play, follow referee's instructions and all field safety rules. Avoid shooting at another player's head, neck or groin area
- Play paintball only where the rules of safety for paintball are followed
- All paintball markers must be chronographed regularly. Adjust the marker to shoot paintballs at a velocity this is 300feet per second (fps) or less and that does not exceed the velocity limit set by the Paintball Park or field where the marker is in use. Chronograph the marker at regular intervals during the day, as well as any time the power source is refilled or changed, any time the barrel or any part of the power system is changed, and upon request of any player or game official
- This paintball marker operates using compressed gas or air at specified pressure ranges. Follow safety procedures when handling compressed gas or air. All filling of compressed gas or air cylinders must be done by qualified persons
- Follow the rules of safe marker handling: keep finger off the trigger until ready to shoot. Keep muzzle pointed in a safe direction. In addition, firmly insert a barrel plug into the muzzle and push the mechanical or electronic safety to "ON" or "SAFE" when the marker is not in use and when in any non-shooting area
- Never shoot at domestic animals or wildlife
- Never mark objects outside the confines of the game or authorized shooting areas
- Never look down the barrel of a marker
- Before disassembly, storage, or transport of this marker, remove ALL paintballs from the marker, barrel, and loader: remove power source: and remove all gas or air from the power system. Insert a barrel plug and put the safety "ON"
- Carry your marker in a case or sturdy bag when transporting it in public
- Safely and securely store marker to prevent access to it by unauthorized persons or minors.

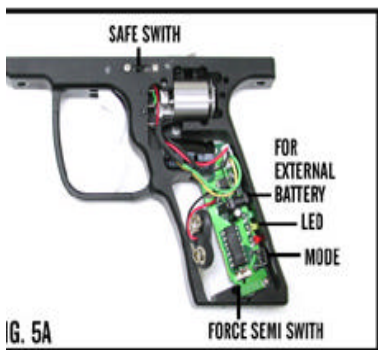


Operating Instructions



WARNING

Every person within range of this paintball marker must wear protective goggles and headgear specifically designed for paintball.



IG. 5A

1. Before continuing with these instructions please refer to the section in Chapter 2 on maintenance and lubrication (pg 16). Your marker should first be properly cleaned internally & lubricated prior to firing to avoid unnecessary wear or damage on the internals. After completing that task, return to this section and continue with step 2 if you have the EVO or EVO GOLD (which comes standard with electronic trigger). If you have a MARS LT or PLUTO skip to instruction point 5 and continue.

2. Use the supplied hex-wrench tools to unscrew the two screws on the trigger frame on the left side of the gun – (the side with the pressure gauge) and remove the trigger frame cover.



3. Use a rechargeable 9.6v battery to power the trigger frame. Insert the battery into the frame, and ensure that no wires are loose, pinched or unsecured before replacing the frame cover.

⚠ WARNING: Do not recharge the battery while it is in the grip frame. The battery will over heat and damage the electronic circuit board.
For optimal performance we suggest that a Armotech 9.6 volt rechargeable battery is used.



4. Turn the trigger frame ON, by pressing the mode button at the back of the trigger frame one time - the green LED should light up. This signifies that the marker is in SEMI shot mode. Pressing the MODE button again will put the marker in 3-BURST mode. Pressing MODE one more time will put the marker in FULL AUTO mode. To turn off the trigger frame, press and hold the MODE button for a few seconds until ALL LEDs are off.
5. Make sure the safe switch is in the SAFE position. On the EVO/EVO GOLD push the switch to the right to turn safe ON, or the left to put marker in active firing mode. On the LT and PLUTO, press the button on the trigger frame to the right for SAFE ON, and to the LEFT (red ring should be visible on the button) for SAFE OFF.



6. Attach threaded barrel firmly to marker.
7. At this time do not attach power source or loader, and do not load any paintballs into the marker.
8. Insert barrel plug firmly into the barrel.
9. Pull the cocking handle (top of marker body as illustrated) straight back until the cocking mechanism locks back in the cocked position



10. Turn the safety switch to the FIRE position and then squeeze the trigger with an even pressure. The cocking knob should snap forward into the un-cocked position. You have just dry-fired your Armotech marker. Do this a few times until you are comfortable with this operation and the feel of the marker when cocking, and firing it.
11. Using the supplied hex-wrench make certain to properly tighten all screws on your marker. These include the trigger frame, the secure positioning screws on the powerfeed, and the lug inside the back of the bolt, which secures the cocking pin. Do not overtighten and take care not to strip ANY of these screws. Tighten the screw holding the cocking pin enough to still allow manual removal of the cocking pin with minimal force – DO NOT TIGHTEN THIS ALL THE WAY DOWN – IT CAN CAUSE DAMAGE TO THE FIELD STRIP COCKING PIN.
12. Attach the loader or hopper to the vertical powerfeed by slowly turning it clockwise while applying a slight downward pressure. Some loaders may require their feed-necks to be sanded in order for them to fit properly into the powerfeed of the marker. Please hold the marker by the powerfeed when inserting the loader to avoid stressing or twisting the powerfeed itself.



 **WARNING: Use .68 caliber paintballs only. Never reuse ammunition. Use of any other ammunition can cause injury to you and/or others, or damage to the paintball marker. Do not remove or replace the POWER FEED PORT.**

Compressed Air/Gas

WARNING

The power system contains compressed gas or air when pressurized. Never disassemble the marker until removing ALL the gas or air from the power system. Always keep hands away from escaping CO2 gas. It can cause frostbite if allowed to come in contact with skin.

- Before attaching any air or gas power source, read and understand this section of the owner's manual. Follow safety rules for handling compressed air/gas. If any leaks occur in the power system, refer to troubleshooting section or Armotech support. Use only cylinders for compressed gas or air that comply with all applicable laws and regulations, including but not limited to those of the US dept of transportation, OSHA, Compressed Gas Association and/or American Society for Testing and Materials.
- VERTICAL AIR: The power source is attached by screwing the threads of the tank or power source adapter into the threaded ASA in front of the trigger frame (PLUTO)
- BOTTOM LINE: The power source is attached by screwing the threads of the tank or power source adapter into the threaded bottom line ASA at the base of the grip or on the drop forward (EVO).
- When cocking the pressurized marker do not release the cocking




knob until after the cocking mechanism has locked back into the cocked position. The marker is now ready to fire.

- Test for function – now that the power source is loaded and the marker cocked, turn the trigger fame ON (for electronic triggers), and flip the safety switch to the FIRE position and squeeze the trigger. The marker should shoot air, and the cocking knob should cycle back to the cocked position ready to fire again. Repeat this several times to get used to the action of the marker. You have now fired your marker WITH loaded power source.

The ARMOTECH paintball marker may be powered by CO₂, regulated compressed air (HPA), or regulated nitrogen. From the source of gas or air through the entire power system, there are varying pressures that are applied to the marker and the components of the power system.

The marker requires a minimum of 450psi for proper operation – if you are using CO₂ please refer to the ANNEX on regulator adjustment for the EVO/EVO GOLD and LT to learn how to adjust, control and properly maintain your input pressure. The PLUTO marker does not have an inline regulator system.

If you are using HPA please ensure that the HPA bottle regulator output is at least 550 PSI.

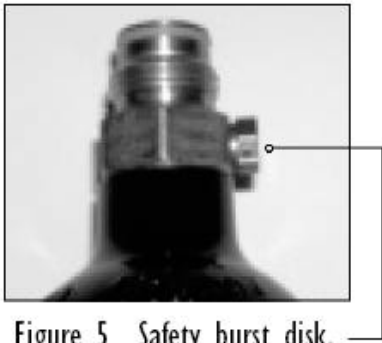
 **WARNING:** Keep hands away from escaping CO₂ gas. It can cause frostbite if allowed to come in contact with skin. If the CO₂ source you are using has an on/off valve, make sure it is in the "OFF POSITION" before attempting to remove it from the paintball marker. Do not expose the CO₂ source to heat or store the CO₂ source at temperatures above 130^oF (54^oC). Always follow the manufacturer's warnings listed on the CO₂ source for handling and storage.

SAFETY RULES FOR HANDLING COMPRESSED AIR OR GAS MUST BE FOLLOWED AT ALL TIMES!

OPERATING PRESSURES AND INPUT PRESSURE

- Operating pressure range 450 p.s.i. to 1150 p.s.i. (Although some markers have been known to operate at pressures as low as 330 p.s.i. or pressures over 1200 p.s.i. it is recommended that the specified operating pressure of the Armotech marker be used in order to avoid problems.)
- Never exceed recommended pressures, as this may be dangerous to you and damaging to the marker. Refer to the section on regulating input pressures for the EVO/EVO GOLD and LT marker models. There is further information on the different expansion chambers on each of these markers in the ANNEX.
- Do not leave a pressurized marker or cylinder in direct sunlight or exposed heat source. Increased temperatures will increase the internal pressure of the compressed gas or air and could cause problems.

VALVE CYLINDER CONNECTION



- The Valve on a cylinder is to remain screwed into the cylinder. Should it loosen, the cylinder may detach from the valve with an extremely dangerous force.
- Every time a cylinder is filled, the connection between the valve and cylinder must be inspected. If any looseness or leak is detected between the valve and the cylinder, do not fill. Drain the cylinder and have it inspected by qualified persons.
- During filling if any looseness or leak is detected between the valve and the cylinder, filling should be stopped and the cylinder should immediately be drained to avoid problems.

FILLING COMPRESSED AIR/GAS

- An overfill of any compressed air or gas cylinder can cause the safety burst disk on the cylinder to rupture. A cylinder may rupture with excessive force. Use properly rated disk only for the burst disk.

- A scale must be used for ALL CO2 fills to prevent an overfill. A pressure gauge must be used for all compressed gas or air fills to prevent overfills.
- Many cylinders are required to have US Department of Transportation hydrostatic tests done at periodic intervals. This interval varies depending on the cylinder type. The date of the cylinder's initial or last testing appears on the cylinder. Out of date cylinders should not be used.
- Installing the Gas/Air Power Source
 - Make sure the BARREL PLUG is placed in the barrel
 - Put the trigger frame on SAFE
 - Screw the compressed air/gas source into the ASA Bottom line Adapter
 - Tighten until you feel a solid stop
 - Turn the gas/air on if it has an on/off valve, otherwise it should be active and ready to go.
 - Do not store the marker with power source installed and full
- Removing the Gas/Air Power Source
 - Always remove power source before performing disassembly of marker
 - Unload all paint from the marker and detach the hopper/loader
 - Put the trigger frame on SAFE, (or turn trigger frame OFF if it's the electronic version)
 - If the power source has an on/off valve (EVO GOLD) – shut it OFF. Otherwise point the marker in a safe position and slowly unscrew the power source.
 - You will hear some compressed gas/air escaping via a bleed-hole while unscrewing the power source. If you prefer you can fire the marker to release ANY pressure in the system, while continuing to unscrew the power source.
 - If the unscrewing is difficult the system still has too much pressure in it – check to make sure the power source is OFF (if it has an on/off valve), or to ensure it is completely discharged before continuing. CO2 can cause damage to O-rings. These need to be inspected regularly to avoid leaks.

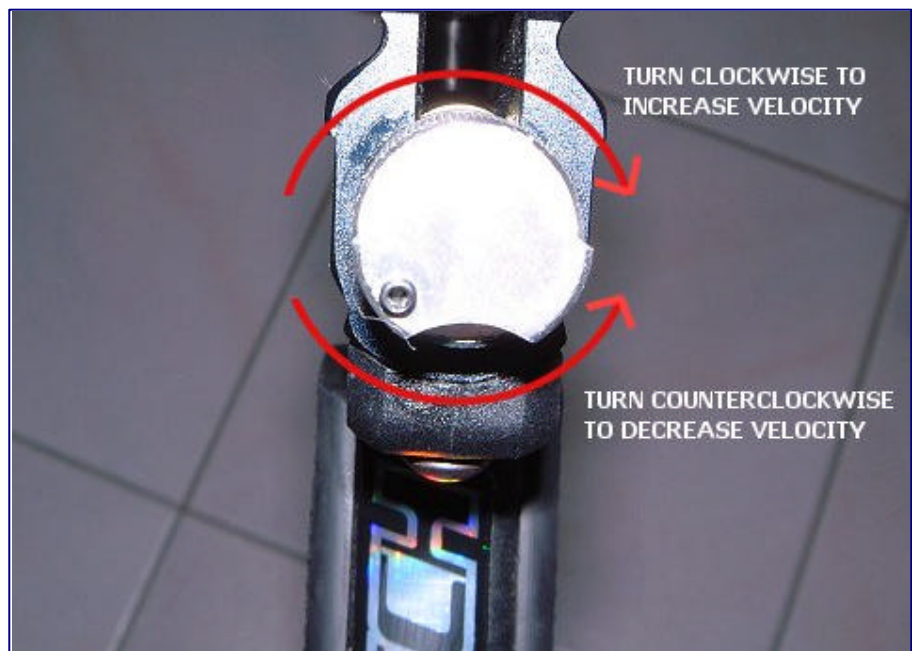
Velocity Adjustments

WARNING

All paintball markers must be chronographed regularly. Adjust marker to shoot paintballs at a velocity that is 300 feet per second (fps) or lower. Make sure the velocity setting is not in violation of the limit set by the authorities of the location where you are playing.

Chronograph the marker at regular intervals during the day as well as any time the power source is refilled or changed or any time a player or game official requests.

- The velocity knob is located at the back on the receiver (marker body). On the Armotech EVO marker this velocity adjuster can be turned by hand easily once the locking retainer screw is loosened.
- The illustrations below show how to adjust the velocity screw.

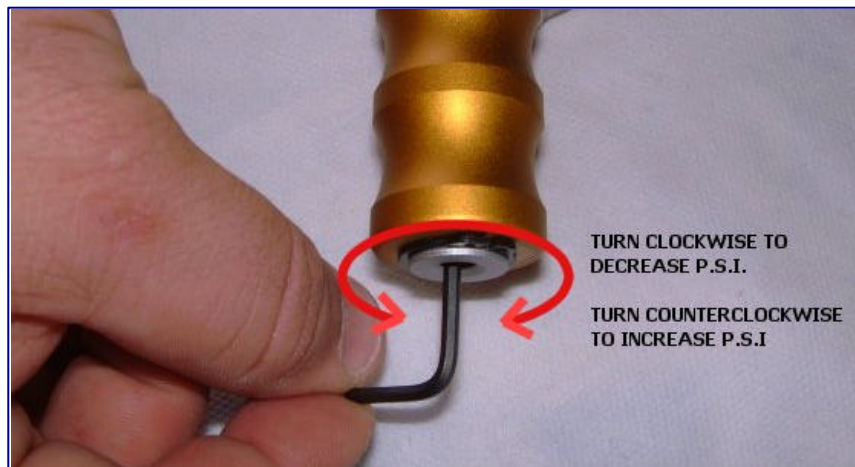


To adjust velocity after loosening the locking retainer screw, turn the velocity screw clockwise in ½ turn increments. To decrease velocities turn the velocity screw counter-clockwise. Once the desired velocity has been reached, lock the velocity screw in place.

- Note: velocity may fluctuate depending on factors such as altitude, type of power source used, and climate conditions. Before using your marker make sure to perform a safe velocity test.
- Use a chronograph and let's ensure we are within the safely allowable velocity range. Velocity should NEVER exceed 300 f.p.s. Some paintball fields may require your marker to be set under 300 f.p.s.

Once you have achieved the proper velocity setting – you can lock it in place with the Velocity Locking Screw.

- Velocity of the marker can also be affected or controlled by the settings of the regulated air/gas supply. On the Armotech MARS EVO/EVO GOLD the regulator is adjusted from a hex-screw on the bottom of the x-chamber. On the LT the regulator adjustment screw is located on the bottom line ASA adapter just in front of



the pressure gauge.

- The regulator is factory set to 450-500 p.s.i. To INCREASE the input pressure turn the hex-screw COUNTERCLOCKWISE and fire the marker 2-3 times. You should see the pressure reading on the gauge change.

- To DECREASE the pressure turn the hex-screw CLOCKWISE and fire the marker 2-3 times. You should see the pressure reading on the gauge change.



LT OPERATING PRESSURE SHOULD NOT
EXCEED 900P.S.I.

Electronic Trigger Operations

WARNING FOR EVO/EVO GOLD MARKERS ONLY

If using the trigger frame to recharge the battery do not exceed 3 hours of charging time. Recharging the battery via the trigger frame for longer than this could cause overheating and damage the internal circuitry

For optimal performance we recommend using rechargeable batteries with no less than 180mA rating.

- The Armotech Electronic trigger frame is outfitted with an electronically controlled SAFE switch. The SAFE switch is located on the left-hand side of the trigger frame just above and to the back of the trigger assembly.
- To put the marker in SAFE mode – flip the safe switch to the “SAFE” or “ON” position by sliding it to the right. To put the marker in LIVE FIRE mode – slide the switch to the left.
- All the Electronics as well as the battery pack connection are accessible by removing the grip frame cover on the left side of the trigger frame (same side as the SAFE switch). After removing this cover carefully examine the electronics and become familiar with them.
- The trigger is TOURNAMENT ready. It has a tournament locking switch (or FORCE SEMI SWITCH) which forces the trigger frame into SEMI fire mode and cannot be changed from the mode button on the back of the trigger during play. Some field require this to be activated in order to use the marker. To turn on SEMI LOCK flip the switch to the left (see fig 5A)
- When the FORCE SEMI SWITCH is off the trigger operates normally. In this mode, the player can change firing modes using the mode button to the back of the frame. With a battery inserted, click the MODE button to activate the trigger. It should activate in SEMI mode, indicated by the

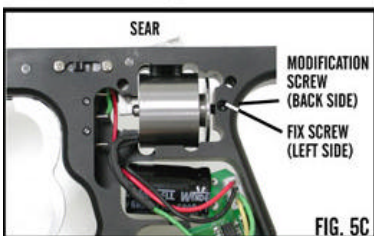
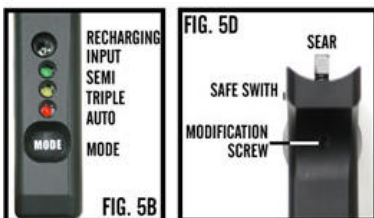
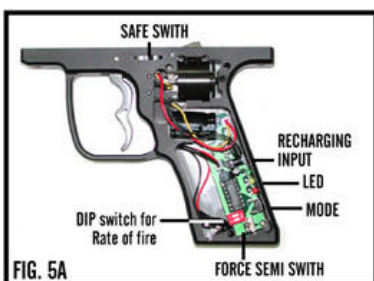


FIG. 5E

green LED. Press the MODE button one more time – the setting should change to TRIPPLE BURST (orange). Press the MODE button again and the mode changes to FULL AUTO (red). Press and hold the MODE button for a few seconds and the system will power off.



- Depending on how sensitive you want your trigger frame to function, some adjustments will be needed. Please consult the ARMOTECH ONLINE FORUM at <http://forum.armotech.com> for details and information on this task, or request assistance from your authorized dealer. In most cases the marker should arrive with all the required trigger frame settings pre-adjusted to optimal operation
- Armotech recommends that this marker be used with some form of agitated or force fed electronic loader/ball feeder if a player plans to use burst mode or full auto mode on the trigger frame. Using an electronic hopper will allow a player to shoot at a higher rate of fire. Fig 5E shows the rate of fire DIP SWITCH and the various settings for the different rates of fire which the trigger frame can handle.
- The marker comes standard set to 6 balls per second (b.p.s.). However, the rate can be changed up to 13 b.p.s. Set the rate of fire based on the rating of your loader and test it for optimal performance and minimal ball breakage.

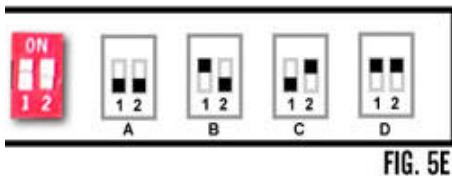
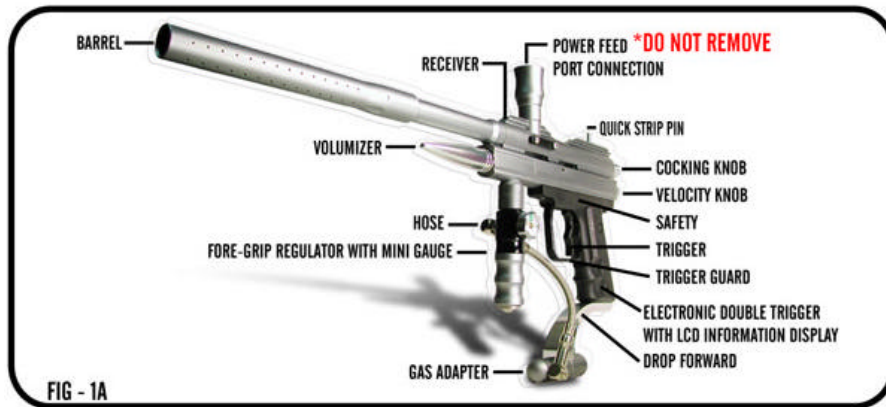


FIG. 5E

- Fig 5E block A shows the settings for 6 b.p.s.
- Fig 5E block B shows the settings for 7 b.p.s.
- Fig 5E block C shows the settings for 10 b.p.s.
- Fig 5E block D shows the settings for 13 b.p.s.



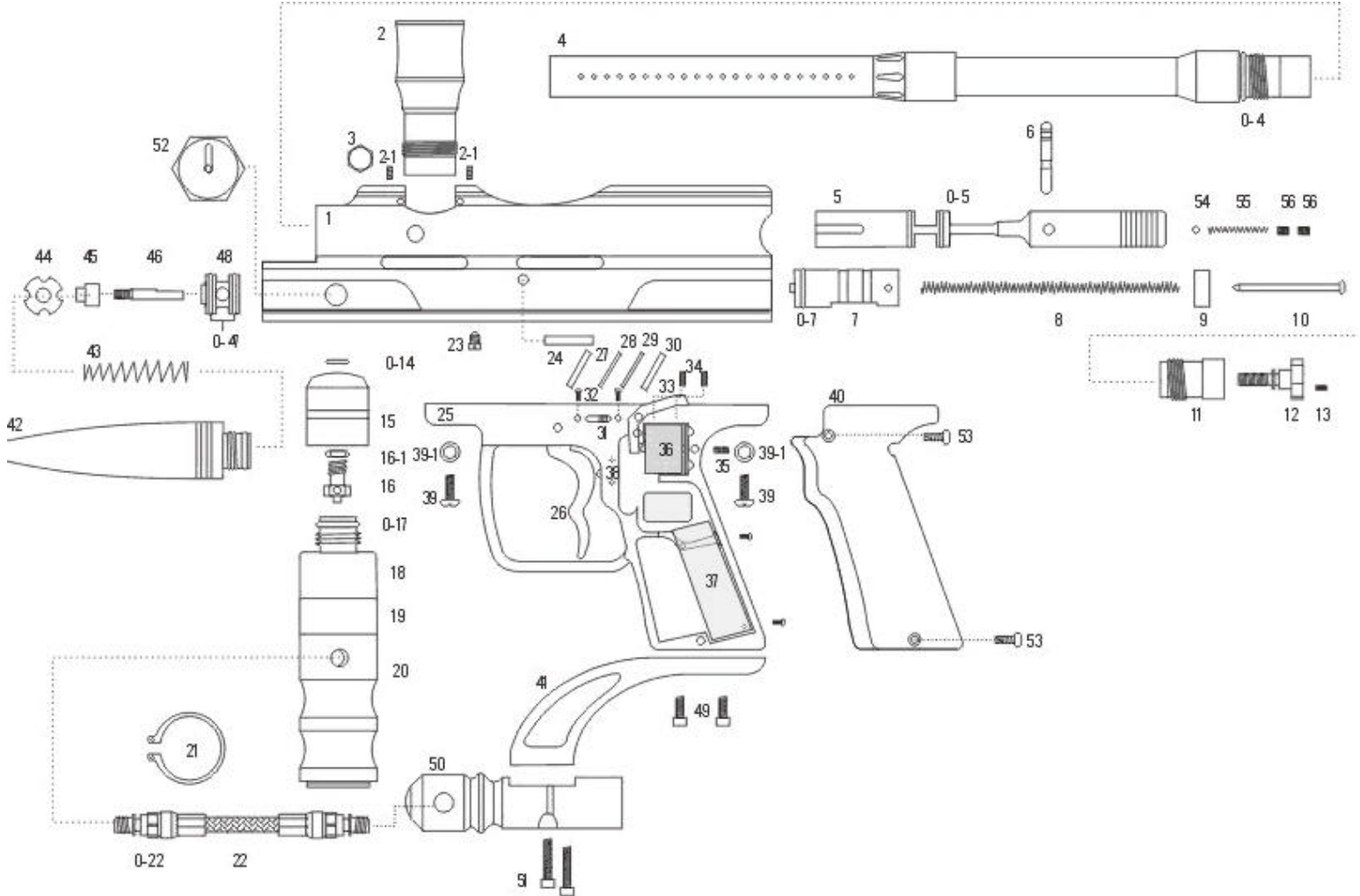
Chapter
2

Mars Series Marker Specifications

1. Lightweight Aluminum Milled Receiver Body
2. Electronic Trigger Frame with semi, 3-burst, and full-automatic modes
3. Adjustable rate of fire from 6 bps to 13 bps
4. Quickstrip Field Maintenance
5. Rear Velocity Adjustment
6. Low Pressure Expansion Chamber System
7. Integrated X-Chamber Regulator
8. Multi-Stage CO2 X-Chamber
9. Volumizer (bullet shaped)
10. Bottom Line ASA Adapter
11. Drop Forward
12. Braided High Pressure Lines
13. Standard 14" 1 piece barrel – ported
14. LED display on trigger frame
15. Top Cocking Blowback
16. Vertical Ball Feed
17. Angel Style Ball-Bearing Ball Detent
18. Pressure Gauge (mini)
19. .689 Caliber Bore



Parts Listing & Diagrams (EVO/EVO GOLD)



1. EVO Receiver Body	2. Vertical Power Feed
3. Hex Nut Metal Ball Bearing Detent	4. 14" Ported Barrel
5. Aluminum 1 Piece Venturi Bolt	6. Field Strip Cocking Pin
7. Striker Hammer	8. Striker Spring
9. Striker Buffer	10. Striker Spring Guide
11. Striker Receiver Cap	12. Velocity Adjustment Screw
13. Velocity Locking Hex	14. ASA Adapter Body
15. Vertical ASA Threaded Section	16. Internal Valve Pin Airflow Assembly
17. Screw On Regulator ASA Section	18. Regulator Bottom Section
19. Reverse Thread xchamber section	20. X Chamber with braided hose adapter

21. X Chamber C-Clip	22. Braided Macroline Airhose
23. Valve Body Retainer Fitting	24. Valve Body Retainer Pin
25. Trigger Frame Body	26. Double Trigger
27. Trigger Retaining Pin	28. Trigger Switch Retainer Pin
29. Trigger Switch Retainer Pin	30. Sear Retainer Pin
31. Safety ON/ OFF Switch	32. Safety Switch Screws
33. SEAR	34. Sear Solenoid Retaining Hex Screws
35. Sear Adjustment Screw (Hex)	36. Automatic Trigger Solenoid
37. E-Trigger Circuit Board	38. Trigger Switch
39. Trigger Screws (39-1)Lock Washers	40. Left Side Trigger Frame Grip Cover
41. Aluminum Drop Forward	42. Volumizer Adapter
43. Volumizer Valve Pin Spring	44. Cup Seal Air guide/Spring Retainer
45. Cup-seal	46. Valve Pin
47. Valve O-rings (not shown)	48. Turbo Valve Assembly
49. Drop Forward Securing Hex Screws	50. Bottom line ASA Adapter
51. Bottom line Pressure Cap/O-ring (ns)	52. Pressure Gauge
53. Grip Frame Cover hex Screws	54. Cocking Pin Retainer Bearing
55. Cocking Pin Bearing Spring	56. Cocking Pin Spring Retainer Lug
0-4 Valve O-Rings	0-5 Venturi Bolt O-Rings
0-7 Striker Hammer O-Ring	0-14 Vert. ASA Body O-Ring
0-17 X Chamber ASA O-Ring	16-1 Internal Regulator Airflow Venturi
2-1 Powerfeed Adjuster/Securing Lugs	

NOTE:

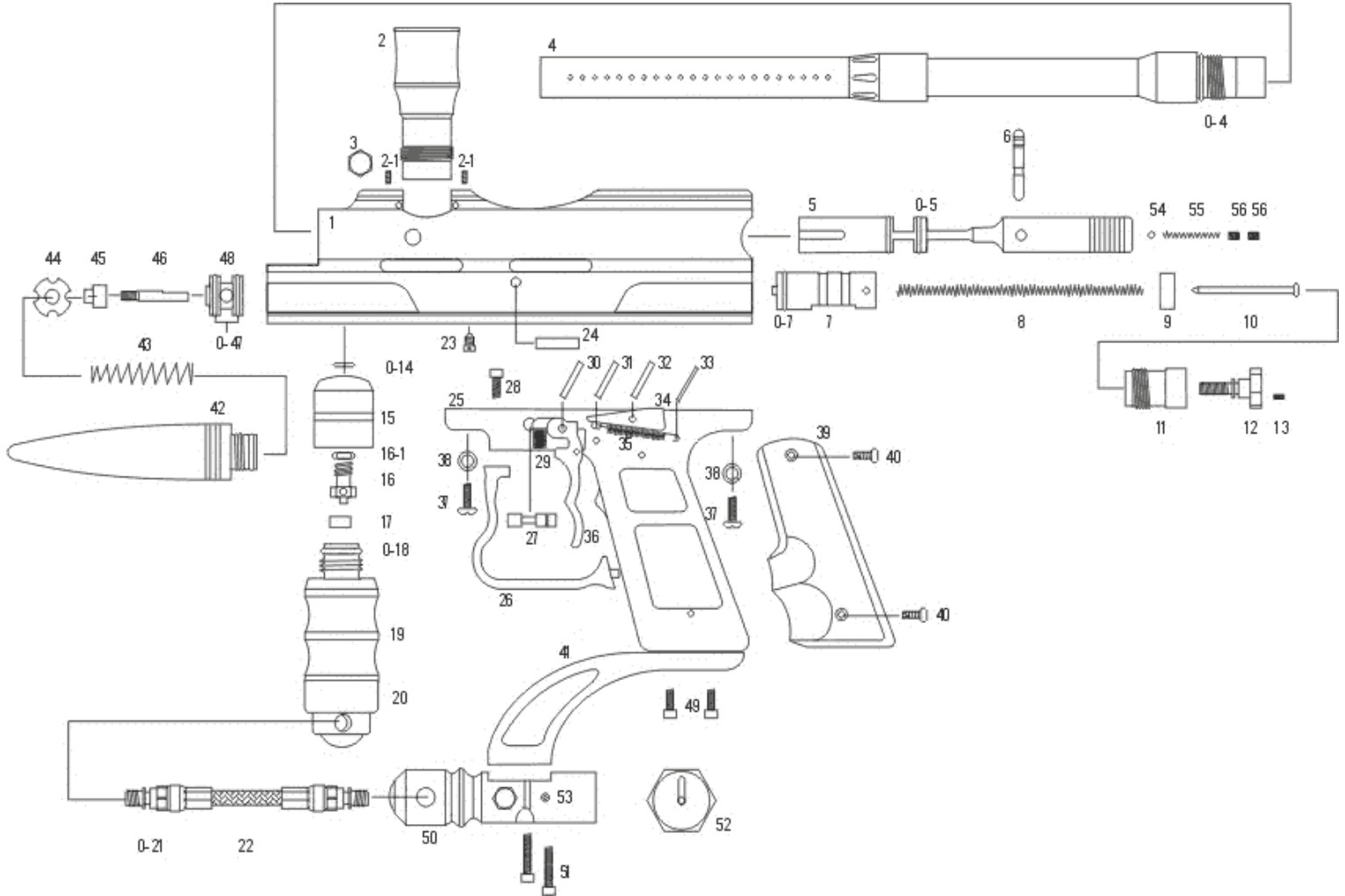
The MARS EVO GOLD has the same parts list, with the exception that the ASA adapter (Part #15) has a 10 degree angle to it, and the barrel (Part #4) is a two-stage (4A/4B) component.

Additionally the Bottomline (Part #50) on the EVO GOLD has an on/off screw adjustment used to activate and de-activate the airflow from the power source (bottle) .This on/off replaced Part #51 on the standard EVO.

The front section of the venturi bolt (Part #5) on the EVO GOLD is DELRIN.

The drop forward on the EVO GOLD (Part # 41) has a flame design

Parts Listing Diagram - (LT)



1. EVO Receiver Body	2. Vertical Power Feed
3. Hex Nut Metal Ball Bearing Detent	4. 14" Ported Barrel
5. Aluminum 1 Piece Venturi Bolt	6. Field Strip Cocking Pin
7. Striker Hammer	8. Striker Spring
9. Striker Buffer	10. Striker Spring Guide
11. Striker Receiver Cap	12. Velocity Adjustment Screw
13. Velocity Locking Hex	14. ASA Adapter Body
15. Vertical ASA Threaded Section	16. Internal Valve Pin Airflow Assembly
17. Gas Thru Washer/Bezel	18. N/A

19. Reverse Thread xchamber section	20. X Chamber end w/braided hose adapter
21. N/A	22. Braided Macroline Airhose
23. Valve Body Retainer Fitting	24. Valve Body Retainer Pin
25. Trigger Frame Body	26. Double Trigger
27. Trigger Safety ON/OFF pushrod	28. Trigger Guard Screw
29. Trigger Adjustment Screw for safety	30. Trigger Retainer Pin
31. Sear Setting Placeholder pin	32. Sear Retainer Pin
33. Sear Tension Spring Holder	34. SEAR
35. Sear Tension Spring	36. Trigger
37. Trigger Frame Screws	38. Trigger Frame Screw Washers
39. Trigger Frame Grip Cover	40. Trigger Frame Grip Cover Screws
41. Aluminum Drop Forward	42. Volumizer Adapter
43. Volumizer Valve Pin Spring	44. Cup Seal Air guide/Spring Retainer
45. Cup-seal	46. Valve Pin
47. Valve O-rings (not shown)	48. Turbo Valve Assembly
49. Drop Forward Securing Hex Screws	50. Bottom line ASA Adapter
51. Bottom line Pressure Cap/O-ring (ns)	52. Pressure Gauge
53. Bottom Line Air Regulation Hex Screw	54. Cocking Pin Retainer Bearing
55. Cocking Pin Bearing Spring	56. Cocking Pin Spring Retainer Lug
0-4 Valve O-Rings	0-5 Venturi Bolt O-Rings
0-7 Striker Hammer O-Ring	0-14 Vert. ASA Body O-Ring
0-18 X Chamber ASA O-Ring	16-1 Internal Regulator Airflow Venturi
2-1 Powerfeed Adjuster/Securing Lugs	

IMPORTANT NOTE: MARS LT OPERATIONAL RANGE IS 400-900 PSI.

1. Lightweight Aluminum Milled Receiver Body
2. Composite Semi-Trigger Frame
3. Quickstrip Field Maintenance
4. Rear Velocity Adjustment
5. Low Pressure Expansion Chamber System
6. Integrated Bottomline Regulator
7. Multi-Stage CO2 X-Chamber
8. Volumizer (bullet shaped)
9. Bottom Line ASA Adapter
10. Drop Forward
11. Braided High Pressure Lines
12. Standard 14" 1 piece barrel - ported
13. Top Cocking Blowback
14. Vertical Ball Feed
15. Angel Style Ball-Bearing Ball Detent
16. Pressure Gauge (mini)
17. .689 Caliber Bore



Parts Listing Pluto



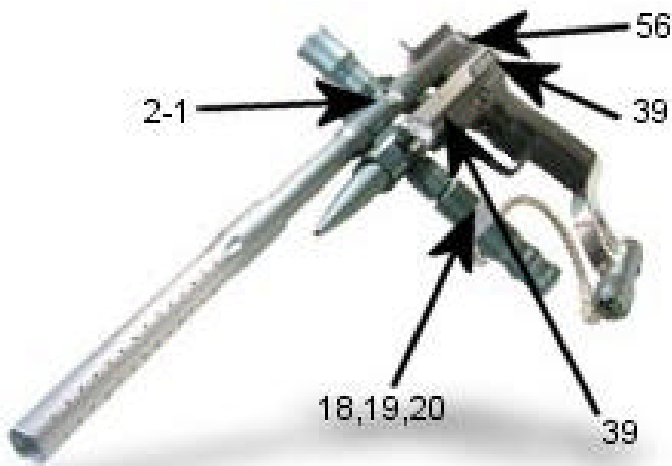
Maintenance, Cleaning and Lubrication

The Armotech marker should be cleaned and lubricated after every usage to ensure proper function and longevity of the product.

NOTE: It is not necessary to disassemble the ENTIRE MARKER to perform standard maintenance and lubrication tasks. DO NOT DISASSEMBLE OTHER AREAS OF THE MARKER UNLESS YOU ARE AN EXPERIENCED AIRSMITH, OR HAVE BEEN ASKED TO DO SO BY AUTHORIZED ARMOTECH SERVICE TECHNICIANS.

TIGHTENING SCREWS

- Armotech ships all markers only lubed with machine oil and with most of the screws lightly tightened to allows for expansion and contracting from changes of temperature and pressure during shipping process. As such before doing ANYTHING with the marker, care should be taken to tighten the following:



- Parts 39 – the screws securing the trigger frame to the receiver body (ALL MODELS)
- Parts 18,19,20 - the entire expansion chamber system should be securely tightened. Please also refer to the ANNEX on expansion chambers and regulators for further information on proper PSI settings if applicable.
- Parts 2-1 – Vertical Powerfeed securing/retainer lugs. Tighten these to ensure that the power feed does not spin, or wobble.

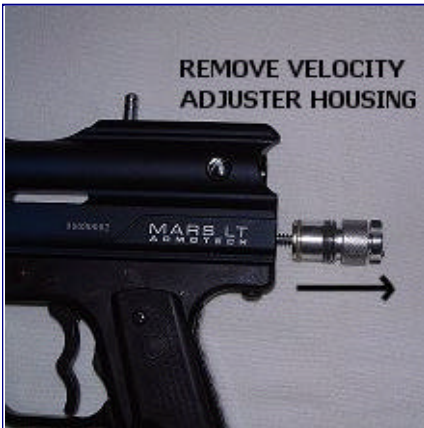
Remember to hold the powerfeed when inserting the loader/hopper.

- Parts 56 – Cocking Pin Retainer hex lugs (On MARS series only)– there are 2 of these inside the back of the bolt – completely remove the first one, and then adjust the second one so that the cocking pin can be removed by hand. Loosen it enough to allow for hand removal but not so much that the cocking pin will fall out, or vibrate out when the marker is in

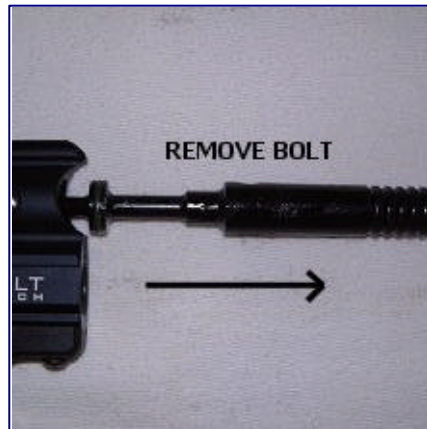
use. Once the desired adjustment for the first lug is made – re-insert the second lug and tighten it securely.

- The lugs on the bottom holding the drop forward – these are tight, but check them ANYWAY!

CLEANING AND LUBRICATION OF INTERNALS



- Remove the striker cap/velocity adjustment assembly at the back of



the marker by unscrewing it.

- Make certain to have already inserted a fresh 9 v battery in the trigger frame as you will need to click the trigger to remove the internals
- Cock the marker by pulling back the cocking handle. Do it carefully so that it slowly ejects the striker guide and spring. Remove the guide and spring

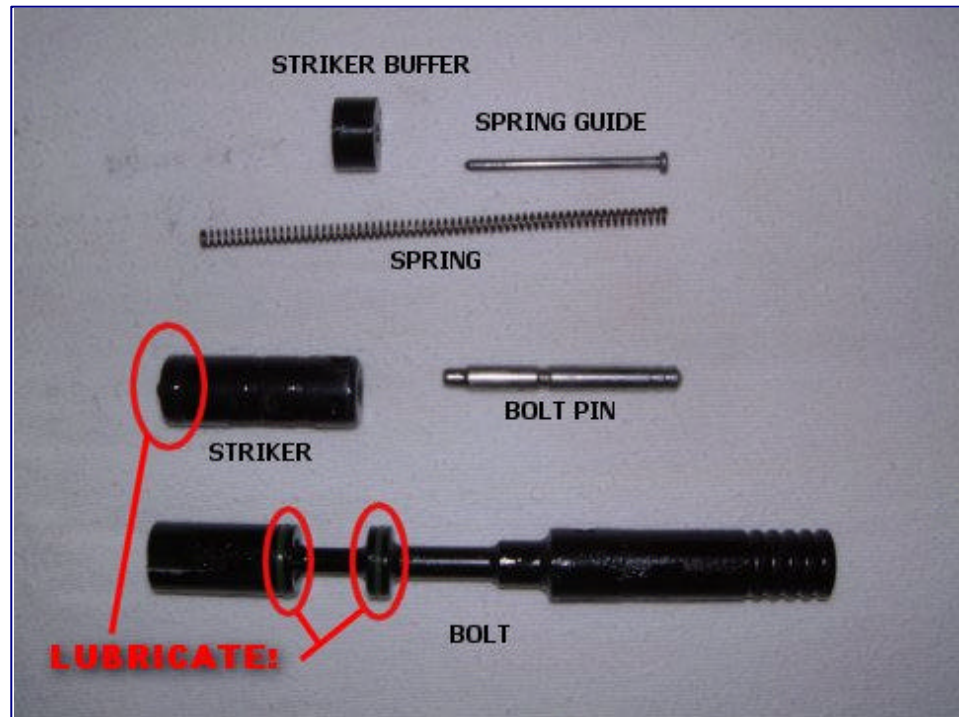
- Remove the Cocking handle (MARS series – evo gold, evo, It, all have field strip pin aka cocking handle. The PLUTO is rear cocking and does not have this feature)
- Remove the Venturi bolt by pulling it out the back of the marker
- Use an hex key wrench to guide the striker and striker buffer out the back of the marker



With the internals removed you should be able to look through the receiver body. In the top tube you should see the ball detent slightly sticking out. In the bottom tube you should see the back of the valve with the valve pin sticking through it.

- With all the internals removed, run a squeegee through the receiver body to clean it out – it is recommended that a latex/proflex squeegee be used for this to avoid damage to the ball detent
- The same squeegee can be reused (after cleaning it) to clean the barrel of any residuals
- The receiver body can be cleaned with a soft rag and warm water (careful not to get any on the electronics of the trigger frame if the marker has an e-trigger) or with a solvent such as WINDEX, which dissolves the paintball residue nicely. **DO NOT USE WINDEX TO CLEAN YOUR GOGGLES. FOLLOW THE MANUFACTURERS RECOMMENDATIONS FOR THAT PRODUCT!**
- Use warm, water or Windex to clean the venture bolt, and striker of any residue and dry them with a lint free cloth.
- Once dry, check the o-rings for any damage or loose fit. If you believe the o-ring to be damaged or fitting loosely – replace it immediately. Do not use the rubber bottle o-rings on your striker or barrel. Use only the Urethane or Teflon o-rings for this purpose.
- Also check the o-ring on the velocity adjuster cap to ensure it's not damaged.
- Before re-assembling the internals, it is recommended that these be properly lubricated. **ONLY PAINTBALL GUN LUBRICATION** is recommended. **DO NOT** lubricate your internals with WD-40. Acceptable lubricants are also **TEFLON GREASE, SILICON GREASE.**

- Lubricate **ONLY** the sections of the venturi bolt and striker where the o-ring is fitted. These are the only sections which make physical contact with the sidewalls of the receiver internally.
- There are 2 o-rings on the venturi bolt and 1 on the striker.



- Re-insert the striker first, making certain to orient it with the flat grooved section pointed down towards the trigger frame – this is the section that locks the assembly in place when the marker is cocked.
- On inserting the striker it may seem to JAM- this is the SEAR which is stopping it from passing – NOTE: Pull the trigger to allow the striker to bypass the sear on the SEMI trigger frame. If you have a battery in the e-trigger, turn it on, and fire the trigger while pressing on the striker to force it past the sear. If you do not have a battery in the e-trigger system, use a tool to depress the solenoid plate (part 36) forward and lower the sear long enough to pass the striker into the marker.
- Once the striker is inserted, insert the striker buffer into the marker, and insert the striker spring into the center of the buffer until it contacts with the striker itself
- Replace the Velocity Adjustment Cap

- Re-insert the venturi bolt – make sure that the grooved section on the front side of the bolt is on the LEFT. This is the groove for the ball detent. Inserting the bolt incorrectly can damage the bolt as well as other internals of the marker. Slide the bolt as far in as possible
- Make sure you can see the cocking pin alignment hole at the top of the bolt – Insert the cocking pin and move the bolt slowly until you feel it align with the cocking handle alignment hole for the striker.
- Once the pin is in it will stick out only about $\frac{3}{4}$ to $\frac{1}{2}$ inch at the top of the marker- You should be able to cock the marker and feel the tension of the spring. If not try aligning it more carefully.
- Once this task is completed you have successfully maintained the core section of your marker.

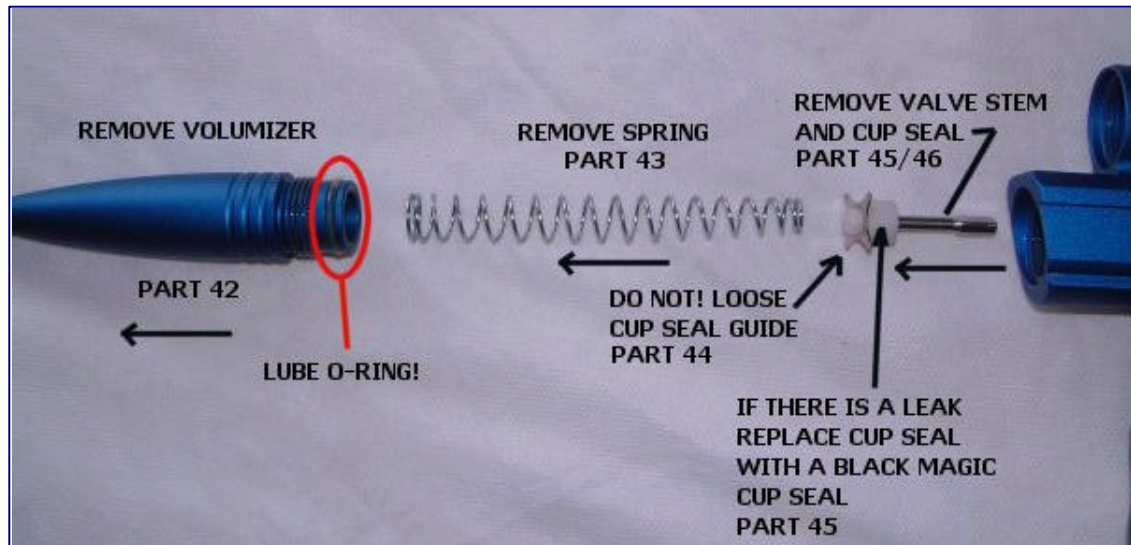
UNLESS YOU HAVE LEAKS THE INTERNALS (BOLT/STRIKER) ARE THE ONLY SECTIONS THAT SHOULD BE REMOVED FROM THE MARKER ON A REGULAR BASIS FOR CLEANING.

- NEVER LET PAINT RESIDUE SIT IN THE MARKER OVERNIGHT – THE CHEMICAL WILL ERODE THE O-RINGS.

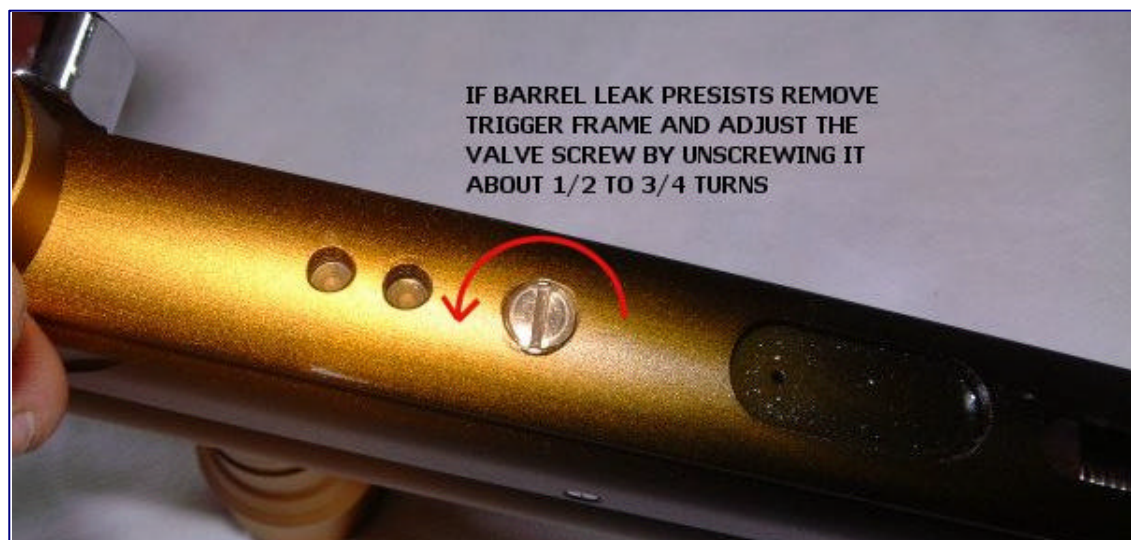
RECOMMENDED LIST OF ITEMS WHICH SHOULD BE KEPT AS SPARES, OR REPLACEMENT PARTS

- Teflon or Urethane O-rings,
- Rubber bottle and ASA O-rings,
- ARMOTECH spare parts/spring kit
- ✘ Extra 9v rechargeable battery if you have an e-trigger
- ✘ Replacement cup seal (original or a black magic)

CUP SEAL MAINTENANCE



1. Unscrew the VOLUMIZER (counterclockwise). Make sure there is NO air source on the marker.
2. REMOVE Spring, Cupseal/Valve Stem Assembly
3. Service CUPSEAL as required
4. Reassemble – Remember to lube the Volumizer o-ring



REMEMBER TO LUBE THE VALVE O-RINGS IF YOU REMOVED AND REPLACED THE VALVE

Troubleshooting Tips, Hints 'n Tricks

- Marker not firing:
 - Check to ensure there is a 9 v battery in the e-trigger frame (MARS EVO, EVO GOLD ONLY), and that is connected and has a fresh charge.
 - Check to ensure the trigger frame is ON by pressing the mode switch 1 time (EVO & EVO GOLD)
 - Check to ensure the safe switch is in LIVE FIRE mode (switched to the left) (ALL MODELS)
 - Check to ensure the marker is cocked
 - Check to ensure that the attached power source (bottle) has sufficient compressed air/gas in it to power the marker. Min pressure required is 450 p.s.i.
- I hear a hissing sound when I attach the power source:
 - Check the o-ring on the air supply bottle – it may not look worn but could be – and will leak
 - If leak is not at bottle attachment, check the airhose connections to ensure they are not leaking. If they are, they may require tightening. Remove the expansion chamber from the marker prior to tightening these fittings. Use proper wrench for this task to avoid damage to marker or fittings.

- If leak is not at the hose, check the o-rings on the expansion chamber to ensure they are not damaged
- Check the o-rings on the volumizer to ensure it is not damaged or leaking
- If none of these sections are leaking, check the cup-seal to make sure it is sitting properly against the valve. In most cases the first leak that you will encounter will be at the bottom line – o-ring on the air supply bottle. The other most common leak that could occur after some time is the cup-seal. This is easily replaced with an Armotech cup-seal or any spyder compatible equivalent – the BLACK MAGIC cup-seal is highly recommended to cure cup-seal leaks.
- There is an o-ring under the pressure screw to the front of the bottom line. DO NOT unscrew this.
- If you are still experiencing a leak, it could be that the regulator on the expansion chamber needs to be adjusted. Follow the instructions in this manual for making those adjustments.
- I cannot get the cocking pin out of the marker (MARS SERIES ONLY):
 - The cocking pin is held in place by pressure exerted by a spring-loaded ball-bearing system. This system is controlled by tightening or loosening of a hex lug on the inside rear of the bolt.
 - Remove the first hex-lug and use the same hex wrench key to loosen the second lug and release pressure on the bearing just enough to allow hand-removal of the cocking pin. Reinsert and tighten the other lug to keep this setting in place.
- I cannot cock the marker:
 - Remove the velocity adjuster cap and examine the striker pin section to ensure it is assembled properly
 - Adjust the sear on the trigger frame to lower the sear as it may be too high (hard) and stopping the striker hammer from moving
 - Check the hex screw at the back of the trigger frame as it may be too tight and causing a misalignment problem

- If this jam occurred after a ball break, carefully check to ensure there is residual skin fragments of the ball stuck between the receiver housing and the barrel
 - Check to ensure the powerfeed is not turned and blocking the venture path
 - If this jam occurred not from a ball break, carefully disassemble the internals and check to see if the o-rings are not dislodged or broken
- The marker shoots once and does not re-cock:
 - The o-ring on the striker hammer could be damaged and needs replacing
 - Check the cup seal to ensure the whole assembly is sitting properly and is not leaking
 - Check your air supply to ensure you have sufficient pressure to operate the marker
- The marker fires and continues to rapid fire, the re-cock does not hold:
 - The sear adjustment is too low – check the section on trigger adjustments and make the appropriate changes to correct the problem
 - Check the screws which hold the trigger frame to the receiver – if they are loose – tighten them, in particular the rear screw
 - The battery on the trigger could be LOW and in need of replacement
- The marker is set to SEMI mode but requires multiple trigger pulls to fire once:
 - The battery in the trigger frame is LOW or dying. Replace it!
 - Check the sear adjustment - it may be too high
- Balls break in the breach when attempting 3-burst mode or full auto:
 - Check your trigger frame firing rate (bps) settings on the RED dipswitch. It could be set too high.

- Check your hopper/loader to ensure balls are not jamming inside it.
 - Use an electronic hopper, or force fed loader for best performance.

- Balls are not flying straight when fired:
 - Clean the barrel with a squeegee
 - Make sure the balls are the correct size/caliber for the bore of the marker .689

- Balls roll out of the barrel or shoots 2 at a time:
 - Ball bore is too small. It needs to be .689
 - Armotech recommends using tournament quality paint
 - RPS / PMI Brand (Big Ball/Warrior, El Tigre, Slam, All Star, Premium, Premium Gold, Marballizer)
 - TC Paintballs (Viper Venoms, Viper Platinum, Pro Series)
 - Nelson Paintballs (Nel Splat, Anarchy, Nelson Gold)
 - PowerBall Paintballs

- Barrel threads look worn down and barrel wobbles a bit
 - Check to ensure barrel o-ring is in place properly
 - Always use some grease type lubricant on the threads to avoid metal-to-metal wear

- Balls shoot but they do not appear to go the distance:
 - Adjust the velocity and check it with a chronograph
 - Check to ensure the striker spring is not damaged, weakened or broken
 - Check your air supply to ensure there is sufficient pressure

- Check to ensure regulator settings are properly adjusted. Min pressure should not be less than 450 p.s.i.

- Vertical powerfeed wobbles a bit when hopper is attached
 - Check to ensure the retainer screws have not come undone
 - Always hold the powerfeed when attaching or removing the hopper to avoid stressing it or damaging its seating on the marker

Warranty Information

REPAIR SERVICE

If your paintball marker needs repair, we recommend that you take or send it to an Authorized Service Station or send it to SpeedPaintball Co., Ltd. ARMOTECH. For an Authorized Service Station near you, call Customer Service at 1-877-607-2255. (International customers should contact their distributor.) **DO NOT ATTEMPT TO DISASSEMBLE IT OTHER THAN AS INSTRUCTED IN THE MANUAL FOR REMOVING PAINTBALLS, CLEANING OR OILING!** Your paintball marker requires special tools and fixtures to repair it. If you take it apart, you probably will not be able to reassemble it correctly. SpeedPaintball Co., Ltd. ARMOTECH assumes no warranty responsibility under such circumstances.

LIMITED ONE YEAR WARRANTY

This product is warranted to the retail consumer for one year from date of retail purchase against defects in material and workmanship and is transferable. To register the serial number of your paintball marker, please return the Product Registration form found in your owner's manual packet. The warranty is not conditioned on the return of the card.

WHAT IS COVERED

Replacement parts and labor. Transportation charges to consumer for repaired product.

WHAT IS NOT COVERED

Transportation charges to SpeedPaintball Co., Ltd. ARMOTECH for defective product. Damages caused by abuse or failure to perform normal maintenance. (See Step 7) Any other expense. **CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, OR INCIDENTAL EXPENSES, INCLUDING DAMAGE TO PROPERTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

WARRANTY CLAIMS

USA and Canadian Customers: Attach your name, address, description of problem, phone number and copy of sales receipt to product. Package and return to Paintballarmory.com
2794 Loker Ave West, Suite #106, Carlsbad CA USA 92008.

International Customers: Please return product to your nearest distributor. If you do not know your distributor, please call 1-877-607-2255 and ask for our International Department for assistance.

IMPLIED WARRANTIES

ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM DATE OF RETAIL PURCHASE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

To the extent any provision of this warranty is prohibited by federal, state, or municipal law which cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.

SUGGESTED ITEMS FOR PROPER MAINTENANCE

Flexible Squeegee

Rod Squeegee with Swab on the end

Cleaning cloths (soft terry-cloth material)

Paintball Marker Lubrication (OIL designed for paintball markers , or Teflon grease)

Rechargeable Battery Packs for the e-trigger

o-ring and spring replacement kit (as a spare)

hex-wrenches of various sizes (marker comes with most commonly needed ones)

Barrel Plug or Condom