



G.I. MILSIM

POWER



G.I. MILSIM
GI-50

00 QUICK START

BARREL BLOCKER

Unpack the GI-50 and screw the included barrel into the receiver. Slide the included barrel blocker over the muzzle and secure the cord over the back of the receiver in a position where it can not slide off, then cinch the cord tight. The barrel blocker is a critical piece of paintball safety equipment and must always be fully seated on the marker's muzzle and secured in place with its strap any time the marker is stored or handled in an area where people or property are not properly protected by paintball goggles or paintball field netting.

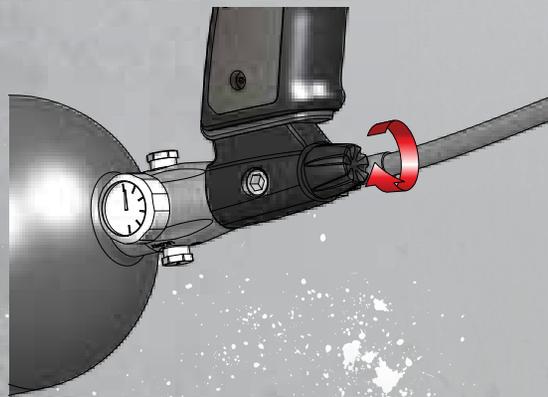
⚠ WARNING

The Barrel Blocker should only be removed when the marker is on a "live" paintball field and all persons involved are wearing proper paintball protection.



TURN ON GAS

Gently pressurize the GI-50 by slowly turning the ASA on/off knob clockwise to open the valve in the CO₂ or HPA system valve. **WARNING** – A gentle rise in pressure is important, as a sudden blast may reduce the service life of the GI-50's internals.



ATTACH TANK

The GI-50 is compatible with both CO₂ and high-pressure compressed air (HPA). Screw-in style HPA systems or CO₂ tanks mount directly into the bottom-line on/off ASA at the bottom of the GI-50's grip frame. See the gasses section of this manual for more information on optimal configuration of the GI-50 with your gas system of choice. CO₂ and HPA bottles are sold and shipped empty and must be filled before use.

⚠ WARNING

Never use oil or any petroleum based cleaner or lubricant in an HPA system. Use only manufacturer recommended lubricants and strictly follow the manufacturer's instructions regarding their use.

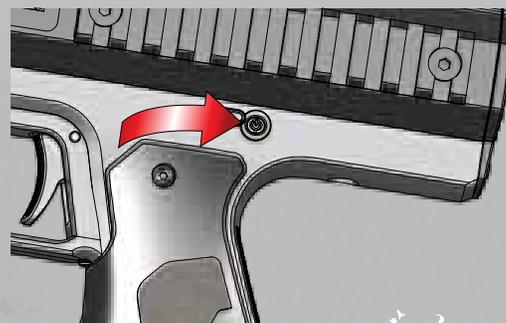


TURN ON POWER

Turn the marker on by pressing the power button and holding it in for a full second. When the GI-50 turns on, the power button will blink 5 times rapidly, with its color indicating the charge level of its battery.

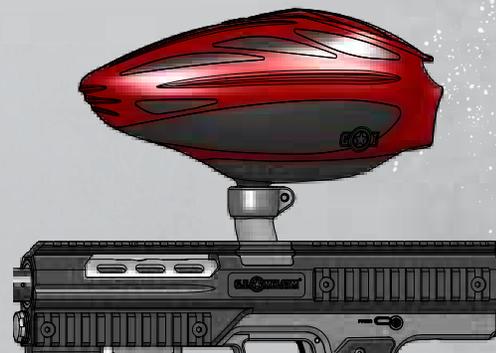
⚠ WARNING

Although the power button serves as the GI-50's safety switch to prevent accidental firing, it should never be relied upon in place of a barrel blocker and proper eye protection.



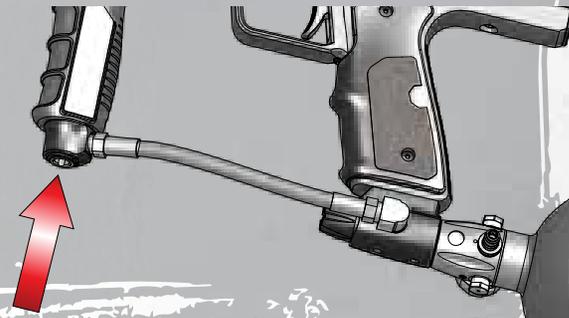
LOADER

Fit a 50 caliber loader into the feedneck of the GI-50. Use a 7/64-inch allen wrench to lock the loader in place. Powered loaders will provide better performance than un-powered hoppers.



ADJUST VELOCITY

Fill the loader with paintballs. If it is a powered loader, turn it on. While wearing ASTM compliant paintball goggles, in an area where all bystanders are protected, remove the barrel blocker and fire over a chronograph to measure the velocity. Using a 5/32-inch allen wrench on the adjuster in the bottom of the vertical regulator, turn clockwise to increase the velocity/pressure, and counter-clockwise to decrease. Take three or four shots after every adjustment to allow the gas pressure inside the GI-50 to stabilize. Adjust until the marker is firing consistently within the limits for the field where you are playing (for safety reasons, never adjust the GI-50 to fire at greater than 300 feet per second). Depending on what modes of fire are allowed at the field where you are playing (semi-automatic, rebound, etc.) you may need to adjust the GI-50's firing mode. See the Electronic Adjustment section for more information.



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! WARNING

- THE GI-50 IS NOT A TOY.
- MISUSE OF THE GI-50 MAY RESULT IN SERIOUS INJURY OR DEATH. EYE PROTECTION SPECIFICALLY DESIGNED FOR PAINTBALL USE MUST BE IN COMPLIANCE WITH ASTM SPECIFICATION F1776 AND MUST BE USED BY THE USER AND ANYONE WITHIN RANGE OF THE GI-50.
- G.I. MILSIM RECOMMENDS THAT THE GI-50 ONLY BE SOLD TO PERSONS 18 AND OLDER.
- THOROUGHLY READ THE GI-50 OPERATION AND INSTRUCTION MANUAL BEFORE OPERATING.
- TREAT EVERY PAINTBALL MARKER AS IF IT WERE LOADED.
- NEVER LOOK DOWN THE BARREL OF A PAINTBALL MARKER.
- KEEP YOUR FINGER OFF THE TRIGGER UNTIL READY TO SHOOT. NEVER POINT THE GI-50 AT ANYTHING YOU DON'T WISH TO SHOOT.
- KEEP THE GI-50 ON SAFE (POWER OFF) UNTIL READY TO SHOOT. (SEE QUICK START)
- KEEP THE BARREL BLOCKING DEVICE ON THE GI-50'S MUZZLE WHEN NOT SHOOTING. (SEE BARREL BLOCKER SECTION)
- ALWAYS REMOVE PAINTBALLS AND DEGAS THE GI-50 BEFORE DISASSEMBLY. (SEE DEGASSING SECTION.)
- STORE AND TRANSPORT THE GI-50 UNLOADED AND DEGASSED IN A SECURE PLACE.
- FOLLOW ALL MANUFACTURER'S WARNINGS AND INSTRUCTIONS FOR PROPELLANT SOURCE HANDLING, STORAGE, AND FILLING.
- DO NOT SHOOT FRAGILE OBJECTS SUCH AS WINDOWS.
- ALWAYS MEASURE THE VELOCITY OF PAINTBALLS FIRED BY THE GI-50 BEFORE USE, AND NEVER ADJUST TO FIRE ABOVE 300FPS (91.44 M/S).

02 | GETTING FAMILIAR

→ STATISTICS

LENGTH/WEIGHT:	12 Inches / 2.7 lbs,
OPERATING PRESSURE:	160 psi
PAINTBALLS:	.50 caliber G.I. Milsim
POWER SOURCE:	9-volt alkaline battery
PROPELLANT:	CO ₂ or Nitrogen/Compressed air
RATE OF FIRE:	20bps max enhanced modes - Uncapped in semi-automatic
OPERATION:	Low pressure electropneumatic
MODES OF FIRE:	Semi-Automatic, Burst, Full-Automatic and League Modes
ANTI CHOP SYSTEM:	Break Beam Optical
BARREL THREAD:	Mil-Sim
GAS EFFICIENCY:	1400+ shots - 48ci / 3000psi HPA system at 280-290 fps
LUBRICANT:	GI-LUBE

MAINTENANCE AND MOISTURE

The GI-50 has been designed with simplicity in mind so that you can concentrate on your game instead of your marker. It has a minimal number of moving parts and seals so that you can maintain the marker with little effort. This DOES NOT mean that you should or can neglect your marker. For best performance, clean and lubricate your GI-50 after each day of use. Rain, drizzle or foggy weather will not harm your GI-50 or prevent it from functioning. Although the GI-50 is able to keep playing through the wettest conditions, it should not be intentionally immersed in water. If it does become waterlogged, disconnect the battery, field-strip the valve system and allow it to fully dry before reassembly.



03 | BARREL BLOCKER & HOPPER

BARREL BLOCKER

Unpack the GI-50 and screw the included barrel into the receiver. Slide the included barrel blocker over the muzzle and secure the cord over the back of the receiver in a position where it cannot slide off, then cinch the cord tight. The barrel blocker is a critical piece of paintball safety equipment and must always be fully seated on the marker's muzzle and secured in place with its strap any time the marker is stored or handled in an area where people or property are not properly protected by paintball goggles or paintball field netting.

⚠ WARNING

The Barrel Blocker should only be removed when the marker is on a "live" paintball field and all persons involved are wearing proper paintball protection.

HOPPER

The GI-50 is a high-performance electropneumatic paintgun. Although its break-beam anti-chop system will prevent paintballs from being chopped if they are not fed fast enough, the best shooting performance will only be possible with the use of a powered loader.

The GI-50's clamping feedneck locks the hopper in place, keeping it with you through the game. Using a 7/64-inch allen wrench, loosen the clamping feedneck before installing a hopper. If the hopper is a tight fit, a flat bladed screwdriver may be used to further spread the gap in the feedneck clamp, provided the clamp screw has been loosened far enough.

BARREL BLOCKER



POWERED LOADER



04 | PAINTBALLS & GASES

WARNING

NEVER PUT OIL IN A COMPRESSED AIR REGULATOR OR TANK—ONLY APPLY MANUFACTURER SPECIFIED LUBRICANTS.

PAINTBALLS

The GI-50 is designed to deliver optimal performance with fresh G.I. Milsim .50 caliber paintballs. Although other 50 caliber paintballs will fit and fire through the marker, advancements in the encapsulation process used to produce G.I. Milsim paintballs give them an edge over thicker shelled competing brands with less consistent shape. The use of G.I. Milsim paintballs will ensure the best possible accuracy and the best chance of each paintball breaking on its target. Paintballs which have been stored in an unsealed container, stored for a long period of time, or exposed to temperature extremes will exhibit reduced performance.

GASES

The GI-50 is designed to provide consistent operation when using either CO₂ or High Pressure Air (HPA) as a power source.

CO₂ tanks consist of a cylinder fitted with a screw-in valve designed to fit the GI-50's Air System Adapter (ASA). CO₂ tanks store carbon dioxide as a liquid, which continually produces more CO₂ gas in order to maintain pressure until the cylinder is empty. CO₂ tanks are not equipped with pressure gauges, instead they are weighed to determine when they are full.

WARNING

The valves on CO₂ and High Pressure Air (HPA) tanks are not user-removable and it is vitally important that they are only removed or installed by a properly trained professional. Improper removal or installation may result in serious injury or death. Always read and follow the instructions included with any compressed gas system.

If CO₂ is able to enter the marker in liquid form, erratic velocity fluctuations may result as the liquid changes to gas, increasing pressure levels.

A relief valve, built into the GI-50 provides protection against over-pressurization damage caused by liquid CO₂. This ensures that the micro-solenoid valve and fine internal seals will not be harmed by using CO₂.

The best performance on CO₂ can be obtained by ensuring that liquid CO₂ can not enter the GI-50. Liquid CO₂ is heavier than CO₂ gas, making it simple to control. There are several methods for blocking CO₂.



05 | GASES CONTINUED

THE WEDGE

A CO₂ wedge is included with the GI-50. This wedge angles the Air System Adapter (ASA) so that liquid CO₂ will run to the rear of the tank, away from its valve. To learn how to install the CO₂ wedge, see the ASA section of this manual.

ANTI-SIPHON

An anti-siphon CO₂ tank has a tube inside, which draws gaseous CO₂ from above the liquid CO₂, much like a diver's snorkel draws air from above the water. Anti-siphon systems must be professionally installed. Anti-siphon CO₂ valves will usually bear a mark, such as a stamped star on the neck of the valve, indicating the direction the anti-siphon tube is facing. It is important when screwing the CO₂ tank into the GI-50's ASA, that the tank is rotated to a position where the indicator mark is facing up. If the anti-siphon tank is oriented incorrectly, the tube may be facing down, in which case it would force liquid CO₂ into the GI-50.

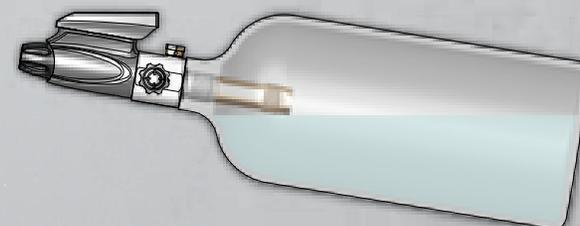
Coiled remote hoses can also be used with a standard CO₂ tank to control liquid. By carrying the CO₂ tank vertically in a paintball pack, with a flexible hose running to the GI-50, the CO₂ tank's valve is facing upwards, away from the liquid CO₂.

High Pressure Air (HPA) systems store compressed air at pressures between 3,000 and 4,500 psi, and use a regulator built into their valve to limit their pressure output to a range comparable to that of CO₂. Gauges built into HPA regulators indicate the amount of gas remaining in the cylinder, based on its pressure. Compared to CO₂, the combination of regulation single phase operation, makes compressed air a more consistent and reliable power source for the GI-50.

Although the GI-50 can operate with HPA systems outputting 400 to 800 psi, 800 psi (high-output) systems are preferable.

The regulator built into the GI-50 will further restrict the air pressure to power the marker's low-pressure operation.

THE WEDGE



ANTI-SIPHON



06 | AIR SYSTEM ADAPTER

AIR SYSTEM ADAPTER

The Air System Adapter, or ASA, accepts screw-in refillable CO₂ tanks or HPA systems. Operation of the ASA is simple. When a CO₂ tank or HPA system is screwed into it, turning the control knob clockwise opens the tank's valve to power the GI-50. Turning the knob counter-clockwise closes the valve and releases pressure from the ASA.

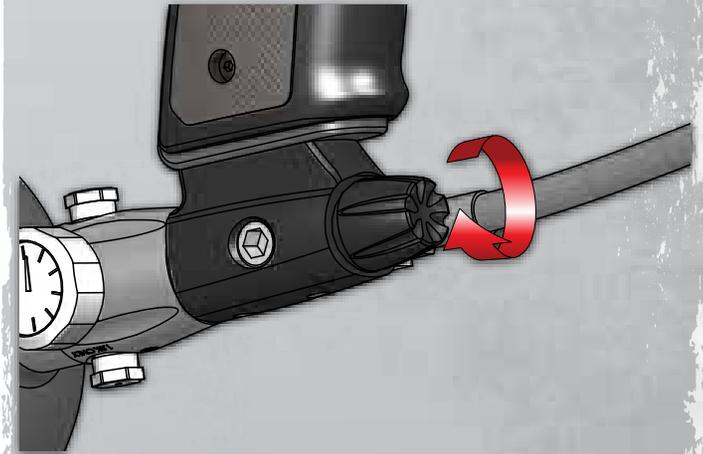
⚠ WARNING

Even after the ASA has been vented, enough gas pressure may be stored within the GI-50 to fire one or more shots.

The ASA is attached to the grip frame by a pair of paintball industry standard 10-32 grip accessory mount screws. For maintenance or configuration, the ASA can be removed by unloading and degassing the GI-50, then completely unscrewing and removing the control knob. While the control knob is out, its o-ring should be inspected for cracks or tears and replaced if necessary. The control knob o-ring should be lightly lubricated with GI-LUBE prior to reassembly. A 5/32-inch allen wrench may then be used to unscrew the two grip accessory mount screws. When they are unscrewed from the grip frame, each screw may be taken out of the ASA by sliding it to the opening in the center of its retaining slot.

Included with the GI-50 is a CO₂ wedge. This wedge may be installed by removing the ASA, installing the wedge into the GI-50 gripframe with a pair of 10-32 screws, then attaching the ASA to the wedge. When in place, the wedge will tilt the gas cylinder at a slight angle to keep liquid CO₂ from feeding to the marker. The CO₂ wedge should not be used with anti-siphon CO₂ tanks (see gasses section) as it may force them to deliver liquid CO₂ to the GI-50. Although the wedge does not provide a performance benefit with HPA systems as it does with CO₂ tanks, some players may prefer the balance and tank orientation it offers.

ASA



REMOVING ASA



07 | FLASHLIGHT MOUNTING

FLASHLIGHT MOUNTING

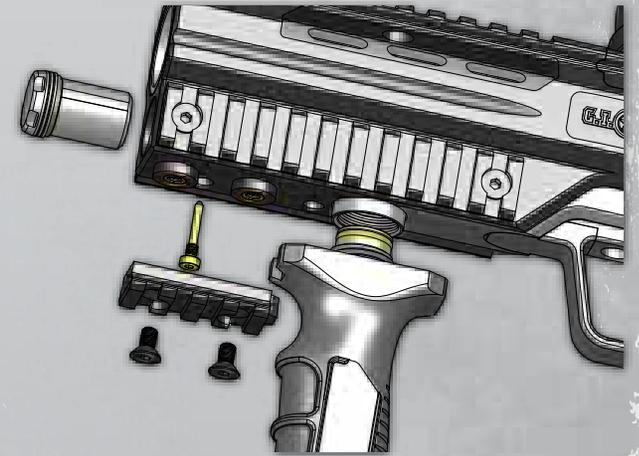
In addition to accessories that can be mounted on its Picatinny tactical rails, the GI-50 features an integrated flashlight mount. Using this mount, a compatible focused beam 2-Cell AA flashlight can be used in place of an expensive tactical flashlight.

Select a popular brand or compatible focused beam flashlight that fits the GI-50 and has a compatible lanyard hole in its base. Make sure the GI-50 is unloaded and use a 1/8-inch allen wrench to remove the two screws holding the lower front tactical rail in place. Lift the rail, exposing the stainless steel flashlight pin. Remove the pin with a 5/64-inch allen wrench, then rotate the foregrip to expose the rear flashlight pin hole, or unmount the ASA (see air system adapter section) and completely unscrew the vertical foregrip and regulator as shown.

The flashlight mount plug may then be wiggled out of its position and stored for later use.

Slide the flashlight into the flashlight mount, making sure that the lanyard attachment hole at its rear is aligned with the rear flashlight pin hole. Install the flashlight pin in the rear flashlight pin hole, then reinstall or rotate the foregrip back into position, reinstall the ASA if it was removed, and reinstall the lower accessory rail.

FLASHLIGHT PLUG



FLASHLIGHT INSTALLATION

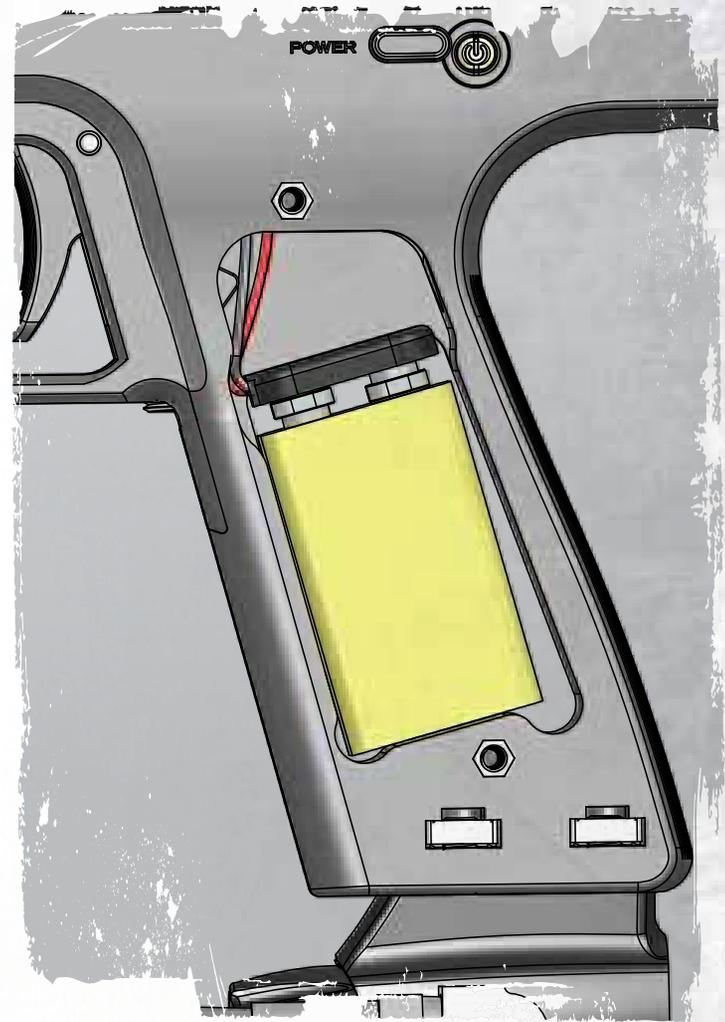


08 | ALL ABOUT THE BATTERY

BATTERY

The GI-50 is powered by a standard 9-volt alkaline battery. Lower cost “heavy duty” batteries will not consistently deliver the amperage needed to operate the GI-50. Erratic performance, especially drops in velocity or skipped shots during rapid fire, can result from a battery that is not delivering full power. To replace the GI-50 battery, use a 5/64-inch allen wrench to remove the two screws from the left side of the rubber grip, then open the grip. Remove the old battery, taking care not to bend, kink or strain its wires. Unsnap the battery from its connector by pulling on the connector, not the wires. Snap in a fresh battery, then place that in the grip frame, tucking the wires into place, before closing and re-securing the grip.

BATTERY



09 | ELECTRONIC ADJUSTMENT

WARNING

THE GI-50 MUST BE UNLOADED AND DEGASSED PRIOR TO MAKING ANY ELECTRONIC ADJUSTMENTS.

ELECTRONIC ADJUSTMENTS

Power

The GI-50 is turned on by pressing the power button. As the GI-50 turns on, the power button LED will blink 4 times rapidly. Green blinking indicates that the battery is between 75 and 100 percent full, yellow denotes a battery that is between 50 and 70 percent full, while red flashing means the battery is below 50 percent full and should be replaced. It is important to understand that the battery level indication is only an estimate, and its accuracy will vary with the type or brand of battery and temperature. Experience will be the best tool to determine how soon a battery must be replaced after the GI-50 indicates it is low. If the GI-50 exhibits trouble firing, one of the first troubleshooting steps should be to install a fresh, brand name alkaline battery.

The GI-50 is turned off by pressing and holding the power button until it stops glowing.

Anti-Chop Eyes

The GI-50 uses a break-beam anti-chop eye system to make sure a paintball is loaded in place before firing. Pressing the power button for approximately one-half second while the marker is on will result in the anti-chop system being bypassed so that the GI-50 will fire regardless of whether a paintball is loaded. Pressing the power button again for 1/2 second will turn anti-chop back on. The power button glows green when anti-chop is active and red when it is off.

Field Lock

Most paintball fields will require that a marker is locked and can not be adjusted on the field without tools. The GI-50 electronics are locked or unlocked by first unloading and degassing the marker, then opening the rubber grip and unplugging its battery. Plugging the battery back in while holding the trigger back will change the marker's field lock status. The power button will glow red to indicate that it has been locked, or green to indicate that it has been unlocked.

Programming the GI-50

Several aspects of the GI-50's operation are user programmable. To enter its programming mode, make sure that the field lock is off, then turn the marker on while holding the trigger back. The power button will light green, then flash dark and back to green. Release the trigger and the power button will glow red, indicating that the firing mode parameter is selected for adjustment. Pulling the trigger will cycle through the available parameters, each indicated by a blinking color pattern on the power button. To select a parameter for change, pull and hold the trigger until the power button stops glowing, then pull the trigger the number of times needed to enter a new value. The power button will then blink a number of times to confirm the value set.

Programming example

(1.) To change the GI-50's BPS Cap to 13 bps, make sure the marker is unloaded and degassed, and that the field-lock is turned off (green). **(2.)** Turn the GI-50 on while holding the trigger back. **(3.)** Release the trigger when it glows solid green. **(4.)** Pull the trigger three times, waiting between each pull to see what color the power button is flashing. After the third trigger pull the power button will be flashing red, indicating that the BPS Cap has been selected. **(5.)** Press and hold the trigger until the power button stops glowing. **(6.)** Pull the trigger thirteen times. **(7.)** Wait and watch as the power button blinks 13 times to confirm the setting. **(8.)** Press and hold the power button until it stops glowing to turn the GI-50 off. **(9.)** After programming and testing the GI-50, it is advisable to re-activate the field-lock.



10 | ELECTRONIC ADJUSTMENT FIRING MODES

WARNING

THE GI-50 MUST BE UNLOADED AND DEGASSED
PRIOR TO MAKING ANY
ELECTRONIC ADJUSTMENTS.

ELECTRONIC ADJUSTMENTS

The GI-50 has the following parameters which may be programmed.

FIRING MODE (Solid Red) This parameter sets the GI-50's firing mode:

Semi-Automatic: One shot per trigger pull. This mode is not affected by the GI-50's BPS cap and will fire as fast as you can pull the trigger. This is the default firing mode.

Capped Semi-Automatic: This mode operates the same as semi-automatic, only it will not fire faster than the GI-50's BPS Cap allows.

NXL: Fires one shot per trigger pull until the trigger is pulled three times in quick succession, at which point it operates as a full-automatic until the trigger is released for a moment, at which point the cycle resets and it fires one shot per trigger pull.

PSP: Fires one shot per trigger pull until the trigger is pulled 3 times in quick succession, at which point it switches into a ramping mode, firing more than one shot per trigger pull while the trigger is pulled repeatedly. After one second of inactivity, PSP mode resets to firing one shot per trigger pull.

Millennium: Fires one shot per trigger pull until the trigger is pulled at a rate of 8 times per second or faster, at which point it switches into a ramping mode, firing more than one shot per trigger pull. When the rate of trigger pulls drops below 8 per second, Millennium mode reverts to firing one shot per trigger pull.

CFOA: Fires one shot per trigger pull until the trigger is pulled three times in a row at a rate of 5.5 times per second or faster, at which point more than one ball is fired per trigger pull, until the rate of trigger pulls drops back below 5.5 per second and the GI-50 reverts to firing one shot per trigger pull.

Auto-Response: The GI-50 fires both when the trigger is pulled and when it is released.

Select Fire: This mode allows for the player to switch between semi-automatic, burst and full-automatic operation during a game. When the GI-50 is turned on in Select Fire mode, it will operate as a semi-automatic with the power button glowing solid. Tapping the power button will switch to burst mode with the power button slowly blinking. Tapping the power button again will switch to full-automatic operation, indicated by the power button blinking fast. Another tap of the power button will switch back to semi-automatic operation and the cycle will repeat.

Burst: Fires a multi-shot burst each time the trigger is pulled. The number of shots fired in each burst is determined by the burst parameter.

Full-Automatic: Fires when the trigger is pulled and continues firing repeatedly until the trigger is released.

Ramping: Begins firing one shot per trigger pull, but then fires more than one shot per trigger pull as more trigger pulls are made at a more rapid pace. As the rate of trigger pulls slows, Ramping mode regresses back to a single shot per trigger pull.



11 | ELECTRONIC ADJUSTMENT CONTINUED

WARNING

THE GI-50 MUST BE UNLOADED AND DEGASSED
PRIOR TO MAKING ANY
ELECTRONIC ADJUSTMENTS.

Anti-Chop (Solid Green) Sets the anti-chop method used:

Classic: The GI-50 will not fire unless there is a ball in the breech, breaking the anti-chop beam.

Delayed: If the breech is empty when the trigger is pulled, the marker will wait up to 1/2 second for a ball to load before it fires. At the end of the delay period it will fire, even if no ball is detected.

Forced: This mode works the same as Classic, but may also fire when the breech is empty by holding down the trigger for a full second.

DWELL (Solid Yellow) Adjusts how long the solenoid valve is held open to fire each shot. Dwell is adjustable from 5 to 65 milliseconds in 1 ms increments. For best performance use the dwell optimization procedure described in this manual. If time does not permit dwell optimization, reliable operation can be achieved with a setting of 22 ms when using CO₂ or 17ms with compressed air. The ideal dwell setting is unique to each marker as it is affected by parts fit and even lubrication. To optimize the dwell setting, make sure a fresh alkaline battery is installed and turn off the anti-chop eye system. Wear proper paintball protective goggles and pressurize the marker with a barrel blocker in place, but no paint or hopper. Turn on the GI-Micro and take a dry-fired test shot (hold the trigger down for a full second, forcing it to fire without paint). Decrease the dwell value until the marker can no longer complete a full firing cycle (bolt will not close all the way and release a full blast of gas). Increase the dwell value and test fire repeatedly until the marker fires a full-volume shot each time the trigger is pulled. For added reliability you may wish to add an additional 3 milliseconds.

BPS Cap (Fast Blinking Red) In all modes except semi-automatic, this setting limits the marker's maximum rate of fire. BPS Cap is adjustable from 4 to 20 balls per second in 1 bps increments. The default setting is 13 bps.

BPS Fine Adjust (Fast Blinking Green) This parameter allows for fine-tuning of the BPS Cap by adding a small value to it. Each increment of this setting adds 0.25 bps to the BPS cap (0=0bps, 1=0.25 bps, 2=0.5 bps, 3=0.75 bps). For example, limiting the GI-50 to 13.25 bps can be achieved by setting the BPS Cap to 13, and the BPS Fine Adjust to 1. By default, this parameter is set to 0.

Burst Count (Fast Blinking Yellow) Selects the number of shots fired per trigger pull when the marker is in burst mode. This parameter may be set between 2 and 4, and has a default setting of 3.

FSDO (Slow Blinking Red) When a marker rests, its bolt may stick in place, causing the next shot to either not fire, or fire with a lowered velocity (First Shot Drop-Off). FSDO compensates for this by increasing the dwell time on the first shot, giving the bolt time to un-stick. FSDO may be adjusted from 0 (off) to 15 milliseconds in 1ms increments. When the marker rests for 20 seconds or more, the next shot fired will have the FSDO value added to its dwell time. The default FSDO setting is 5 ms.

Setting a value of Zero

When entering a value of zero, pull and hold the trigger to select the desired parameter, then do nothing. Simply wait, and the GI-50 will accept that as a zero, then return to the power button color and blink code indicating the current parameter.

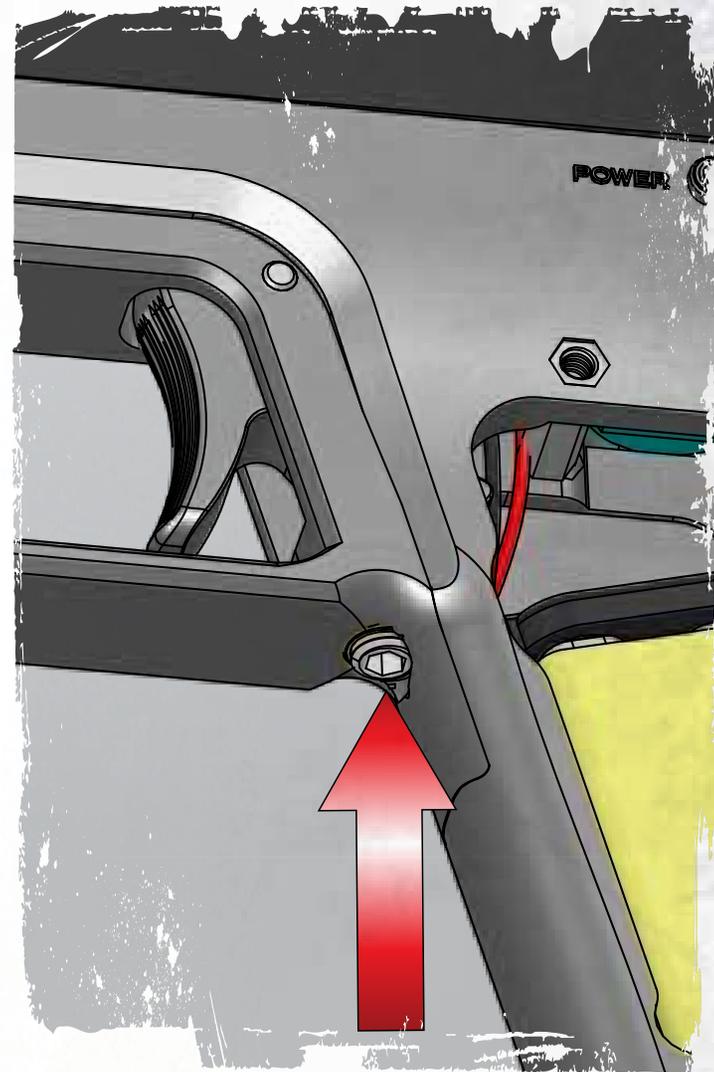


12 | TRIGGER ADJUSTMENT

TRIGGER ADJUSTMENT

The length of the GI-50 trigger pull is adjustable with a 1/8-inch allen wrench. The trigger adjustment screw is located at the bottom of the trigger guard where it meets the grip frame. It may be helpful to remove the marker's rubber grips to provide easier access when making adjustments. Turning this screw clockwise decreases how far forward the trigger can move, while turning counterclockwise increases it. If the trigger is not adjusted to swing far enough forward, the microswitch inside the GI-50 will not be able to reset, resulting in the marker not firing.

TRIGGER ADJUSTMENT



13 UNLOADING DEGASSING

UNLOADING AND DEGASSING THE GI-50

⚠ WARNING

Always watch compressed gas cylinders to make sure that the cylinder and valve are unscrewing from the ASA, and that the cylinder is not unscrewing from its valve. If the cylinder does begin to separate from its valve, STOP IMMEDIATELY, and seek professional assistance.

After use and before transportation maintenance or storage, the GI-50 must be unloaded and degassed. In an area where it is safe to shoot, and all persons are protected by paintball goggles or netting (such as the chronograph area at a paintball field) remove the hopper from the GI-50. By turning the GI-50 upside down, any paintballs in the feedneck can be shaken out.

Turn the GI-50 on, then de-activate the break-beam anti-chop system by pressing the power button for approximately one-half second. Dry-fire the GI-50 in a safe direction to ensure that no paintballs remain in the GI-50.

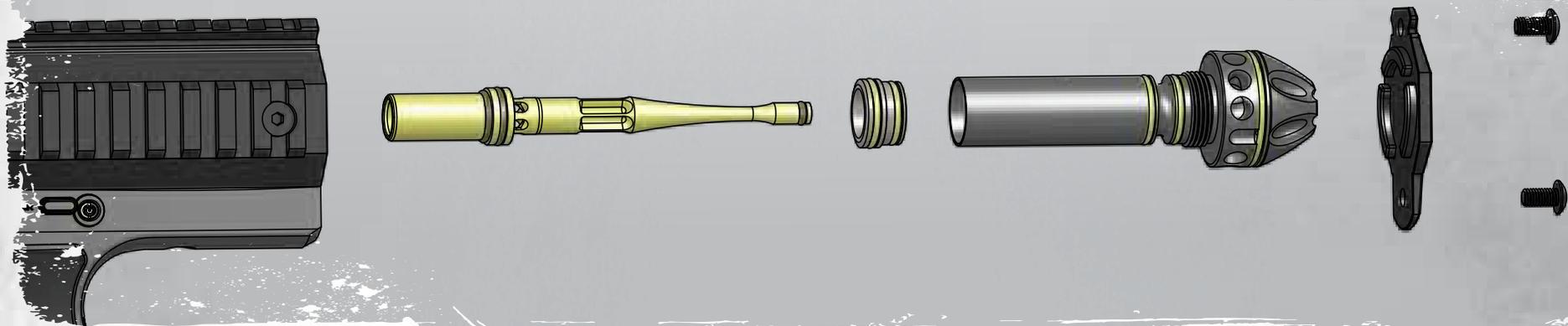
Turn off the ASA by turning the control knob counter-clockwise, then remove the CO₂ tank or HPA system.

Continue to dry-fire the GI-50 in a safe direction until all the gas pressure inside has been released and only the chirp of the solenoid valve is heard each time the trigger is pulled.

⚠ WARNING

Even with no CO₂ or compressed air system attached, the GI-50 may still have enough gas pressure stored in the regulator and firing chamber to fire one or more shots.

14 | FIELD STRIPPING



FIELD STRIPPING THE G.I.-50

The valve system in the GI-50 has only one major moving part. Regular cleaning and lubrication is necessary to ensure accurate and consistent performance. The GI-50 should be field stripped, cleaned and lubricated any time it shows erratic performance, becomes contaminated with paint, dirt or other debris, or for general maintenance after 3 or 4 days of use.

Unload and degas the GI-50. Use a 1/8-inch allen wrench to remove the two rear cover screws and lift off the rear cover. Remove the barrel, and use a 5/16-inch allen wrench to unscrew and remove the bolt sleeve from the back.

Using a soft, non-marring tool like a wooden chopstick or plastic toothbrush, push the bolt and bolt stop out the back of the GI-50.

Clean the interior of the receiver, the bolt sleeve, bolt and bolt stop with a clean cloth or paper towel. Inspect their o-rings for signs of damage such as cuts or rips, and replace if necessary.

Lightly lubricate all o-rings with GI-LUBE paintgun grease. Use GI-LUBE sparingly, as over-lubrication can cause the GI-50 to operate inconsistently.

Slide the bolt stop onto the bolt from the rear. Slide the rear of the bolt into the bolt sleeve. Hold this entire assembly vertically with the front of the bolt pointing upward, and insert it up into the back of the GI-50.

Screw the bolt sleeve into the back of the GI-50 by hand, taking care not to cross-thread it into the receiver. Use the long end of a 5/16-inch allen wrench to turn the bolt stop until it is snug.

Reinstall the rear cover. As with the bolt sleeve, do not use the short end of the allen wrench, as the longer end acting as a handle would create too much leverage, making it easier to over-tighten the screws.



15 ANTI-CHOP & DETENT MAINTENANCE

FULL DISASSEMBLY



The internal gas lines and electronic components of the GI-50 are well protected inside their receivers – however they are delicate and may be damaged by improper handling or re-installation. For this reason it is highly recommended that full disassembly of the GI-50 be performed by an armsmith with G.I. Milsim factory training. Removal of internal hoses from their barbed fittings will stretch them to the point that they can not be re-used without causing leaks.

Occasionally a more thorough cleaning of the GI-50 receiver is necessary to clean paint or debris from the anti-chop system, or to replace worn ball detents. Both are accessed through a complete disassembly of the receiver.

Unload and degas the GI-50, then field strip the valve system following the instructions in this manual.

Remove the lower accessory rail as when installing a tactical flashlight.

Using a 1/8-inch allen wrench, remove the screws holding the ASA to the grip frame.

Unscrew the vertical regulator from the receiver's vertical ASA. Take care not to lose the filter screen that is inside the vertical ASA.

Remove the rubber grip and battery, as when changing the battery.

Use a 1/8-inch allen wrench to remove the front and rear grip frame screws. Carefully remove the grip frame from the receiver. Be aware that the clear power button fits loosely into its position in the side of the grip frame. Be careful not to drop or lose it. Watch to make sure the battery clip does not snag in the grip frame as the two parts are separated.

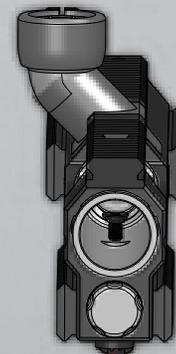
Reach the long end of a 1/8-inch allen wrench through the access hole in the top tactical rail, down into the head of the vertical ASA screw.

Unscrew the the two gas-through banjo bolts (indicated with arrows in illustration) using a 1/8-inch allen wrench. Unplug the anti-chop wiring harness from the circuit board (pull by the connector, not the wires) and lift the pneumatic control assembly off of the receiver.

REMOVING GRIP FRAME



REMOVING BREECH SCREW



REMOVING CIRCUIT BOARD



16 | ADVANCED MAINTENANCE CONTINUED

Remove the body block screw and body block, then slide the breech out the back of the receiver.

The anti-chop circuit board may be lifted out of the breech and wiped clean with a soft cloth while a cotton swab is used to clean its channel in the breech. Both rubber ball detents should extend into the breech and show no rips or tears. If they must be replaced, they may be pried out with an o-ring pick, and pressed into place with a small allen wrench.

When reinstalling the breech into the receiver, the break-beam anti-chop circuit board must be fully seated in the breech. Holding the breech and receiver upside down will help the circuit board remain seated while the parts are being reassembled.

When re-attaching the pneumatic control assembly to the receiver, take extreme care not to cross thread the fittings. Use the long end of the allen wrench to tighten the gas fittings and all screws, being careful to tighten them snug without over tightening.

⚠ WARNING

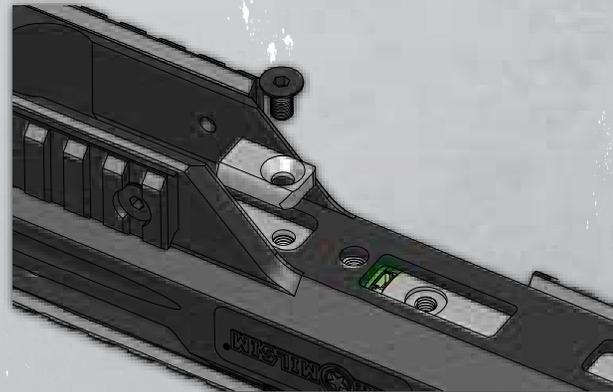
Over-tightening or cross threading screws or fittings may result in permanent, non-repairable damage.

Be sure to guide the battery clip down into the grip frame before re-joining the grip frame and receiver.

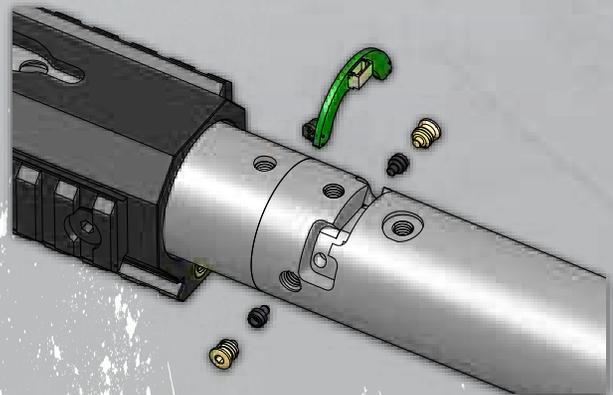
Make sure the clear power button does not fall out of its place during reassembly.

Carefully tuck in all wires and hoses while rejoining the grip frame to the receiver. If the grip frame does not fit snugly to the receiver, pull the grip frame back away and look for hoses, wire, or improperly placed parts blocking the fit. Do not force the parts together or permanent damage to the circuit board may occur.

REMOVING BODY BLOCK



ANTI-CHOP BOARD & DETENTS

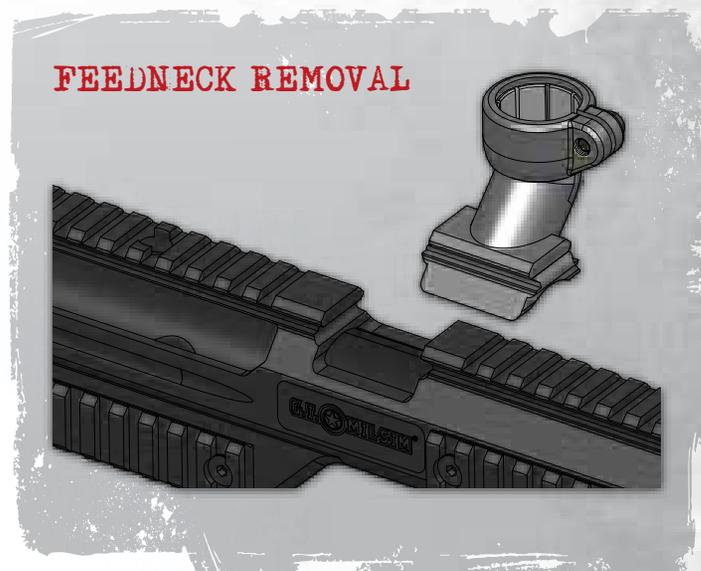


17 | FEEDNECK SWAP

The GI-50 uses an angled feed neck so that the upper tactical rail and any sights mounted on it have a clear view to the target. The feedneck and hopper can be configured to sit either to the left or right of center.

The optimal position for the hopper is a matter of player preference. Some right-handed players prefer to have the hopper on the right, so it obstructs less of their view. Most paintball rule sets stipulate that a paintball hitting and breaking on the player or anything they are carrying (including marker and hopper) takes them out of the game. For this reason some right handed players prefer a hopper-left arrangement. In this configuration the hopper is still protected by hard cover when the player leans out of a bunker or around a tree to the right, making them a smaller target. For left-handed players the benefits of these two hopper positions are reversed.

To change the side from which the GI-50 feeds, the marker must be disassembled and the breech removed from the receiver, following the directions for eye and ball detent maintenance. The breech acts as a locking mechanism securing the feedneck into the receiver. Once the breech is removed, the feedneck may be slid out of the receiver to one side, reversed and slid back into place. The fit of the feedneck to the receiver is quite snug, so it may need to be wiggled slowly and carefully in and out of place. The marker may then be reassembled, making sure the feedneck is properly centered, allowing the breech to slide into the receiver.



18 VERTICAL REGULATOR

VERTICAL REGULATOR

Although explained here, regulator service should only be performed by a G.I. Milsim trained airsmith. With the marker unloaded and degassed, remove the lower tactical rail as when installing a flashlight (see flashlight section of this manual). Unscrew the regulator from the marker and remove the grip frame following the instructions in this manual. Take care not to lose the filter screen that sits inside the vertical regulator's ASA connection. Locate the regulator cover lock screw at the bottom rear of the regulator cover and loosen it with a 3/32-inch allen wrench, then slide the regulator out of its cover.

Using a pair of snap-ring pliers, remove the snap-ring from the bottom of the regulator and slide the regulator off the swivel. This is the preferred way to separate the regulator from the hose and bottomline ASA because it does not disturb the sealed hose fittings and is not likely to cause a leak.

Using a 7/16 open end or adjustable wrench, engage the wrench flats in the sides of the spring platform and remove it from the bottom of the regulator body. The regulator spring will now be free to fall out into your hand.

The brass regulator piston may be removed by tapping the regulator body against a table top or solid, but soft surface such as a block of wood.

At this level of disassembly, the seal in the end of the piston and the regulator body may be inspected, cleaned with a soft cloth or cotton swab, and replaced if necessary. If the regulator seal shows signs of damage, it may be removed and flipped over so that its back side is used instead. If both sides of the seal are damaged, it must be replaced. Lightly lubricate all o-rings with GI-LUBE for reassembly. Do not lubricate the regulator seal at the end of the piston.

The relief valve assembly should only be removed if it is constantly leaking. Occasional venting, especially if using CO₂, is normal and does not indicate a leak. The relief valve assembly may be removed with a 9/64-inch allen wrench.

The velocity adjuster is located inside the lower end of the spring platform and similarly should only be removed if shown to be the source of a leak or clog. First the internal c-clip ring must be removed from inside the spring platform. This must be done with a pair of narrow snap-ring pliers. Some airsmiths have used bench grinders to re-shape standard snap-ring pliers for this task. The adjuster is equipped with left-hand threads and will need to be turned clockwise for removal. If regulator blockage is suspected, be sure to inspect, and if necessary, replace the inlet filter in the side of the velocity adjuster.

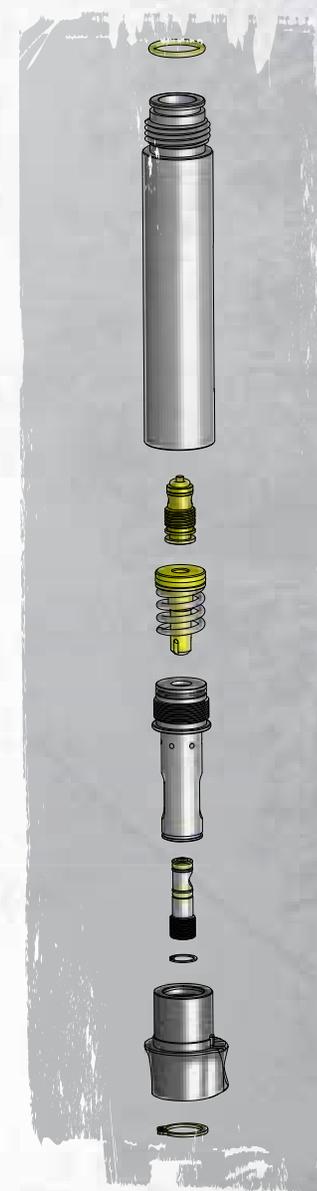
The vertical regulator is reassembled in the reverse order of disassembly. The piston slides into the regulator body wide end first, followed by the regulator spring. The spring platform should be tightened for a snug fit. Do not over-tighten. Re-attach the regulator swivel to the bottom end of the regulator and secure it in place with its snap-ring. Reinstall the assembled regulator into the marker. Re-adjust velocity after servicing the regulator.

WARNING

Service and adjustment to the regulator will cause changes in velocity. Always re-chronograph the marker following the procedure in this manual after working with the regulator.

The relief valve in the vertical regulator provides protection against pressure spikes caused by seal failure or liquid CO₂. Replacing the vertical regulator with any other brand or model will by-pass an important safety feature creating a risk of equipment failure or injury and invalidating the G.I. Milsim warranty.

REGULATOR



19 | TROUBLESHOOTING PROBLEMS &

MARKER IS LEAKING INTERNALLY

- Liquid CO₂ may cause temporary venting from relief valve or solenoid valve. Make sure the marker is properly configured to prevent feeding of liquid CO₂.
- Pneumatic hoses may be loose, damaged or not fully connected. Replace hoses with genuine G.I. Milsim hoses only.
- Hose has been disconnected and re-attached. Replace with a new G.I. Milsim internal hose – re-used hoses will have been stretched and will cause leaks.

MARKER IS LEAKING DOWN THE BARREL

- One or more of the bolt or bolt stop o-rings are damaged or dirty. Inspect and replace if necessary, making sure to clean and lubricate the parts following the instructions in this manual.

MARKER IS LEAKING FROM BOTTOMLINE ASA

- Unload and degas the marker. Remove the on-off control knob and inspect its o-ring. Clean, lubricate and if necessary replace.

MARKER IS OCCASIONALLY LEAKING FROM THE VERTICAL REGULATOR

- Gas may occasionally vent near the top of the vertical regulator, especially when using CO₂. This is a normal function as the relief valve protects the marker, and does not indicate a problem.

MARKER EXHIBITS FIRST SHOT DROP-OFF (FSDO)

- FSDO is a low velocity, or non-firing first shot, followed by normal shooting and is often caused by debris in the bolt or a poorly lubricated bolt. Clean the bolt, breech, bolt stop and bolt sleeve, and lubricate them with GI-LUBE as instructed in this manual.
- FSDO can also be caused by too low of a dwell setting – adjust the dwell value, and or FSDO Compensation settings, as instructed in this manual.

MARKER EXHIBITS INCONSISTENT VELOCITY OR DROPS OFF SIGNIFICANTLY DURING RAPID FIRING

- Check paint quality. Your marker is optimized for use with fresh G.I. Milsim 50 caliber paintballs. Other brands with less consistent production quality, or paintballs that have been exposed to humidity or temperature extremes may vary in size or roundness causing inconsistent operation.
- Gas could be low. Fill gas source and make sure gas supply is turned on.
- Battery may be low. This will be most noticeable with velocity dropping and then entire shots not firing during rapid fire. Replace battery with a new brand name alkaline battery.
- Regulator may be contaminated or damaged. Follow the instructions in this manual or see a G.I. Milsim technician for service.
- Liquid CO₂ may be entering the regulator – see the gasses section of this manual for guidance in proper CO₂ set-up.



20 | TROUBLESHOOTING PROBLEMS &

MARKER WILL TURN ON BUT WILL NOT FIRE

- Battery may be low or dead – replace with fresh brand name alkaline battery.
- One or more of the trigger adjustment screws may be mis-adjusted. See the trigger adjustment section of this manual for guidance.
 - Trigger switch may be damaged. Contact your dealer or G.I. Milsim technical support.
 - Regulator output pressure may be too high. Adjust the velocity to its lowest limit, then follow the velocity adjustment procedure in this manual.
- Liquid CO₂ may be entering the valve – see the gasses section of this manual for guidance in proper CO₂ set-up.

MARKER IS BREAKING PAINT

- Use only fresh G.I. Milsim 50 caliber paintballs. Poor quality paint, or paint damaged by humidity or temperature extremes during shipping or storage, will not perform well.
- Ball detents may be worn or damaged. Inspect, and if necessary, replace following the disassembly instructions in this manual.
- The anti-chop eye system may be turned off. Turn anti-chop back on.

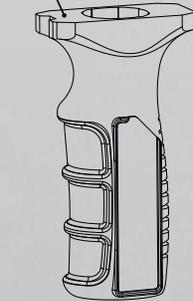
MARKER WILL NOT FIRE RAPIDLY

- Check or set the marker's firing mode and rate of fire limits to modes which will allow greater rates of fire.
- The marker's break-beam anti-chop system prevents it from firing before a paintball is loaded. Use of a forced-feed loader will feed paintballs into the marker faster than a gravity fed loader, allowing it to achieve higher rates of fire.



21 PARTS DIAGRAMS

SP150116BLK -
GI-50 REGULATOR
COVER



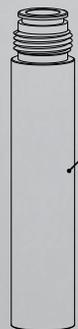
SCRN1032X0250SCO -
REG COVER LOCKING SCREW



ORN01590BU - REGULATOR
ASA O-RING



MFV101 - REGULATOR
BODY



ORN00670UR - PRV SEAL



RELIEF
VALVE
ASSEMBLY



PRV101 - PRV WASHER



PRV100 - PRV. PISTON



SPR033 - PRV. SPRING



PRV102 - PRV. RET. SCREW

REGULATOR
PISTON



ORN01470UR - PISTON O-RING



MFP105 - REGULATOR PISTON



RIPS103 - REGULATOR SEAL



SPR032 - REGULATOR SPRING



ORN01470BU - SPRING PLATFORM
O-RING



ORN01070UR - REAR SEAL

SPRING
PLATFORM



MFV102 - SPRING PLATFORM

VELOCITY
ADJUSTER



ORN00690UR - VELOCITY ADJUSTER
O-RINGS



MFV110 - INLET FILTER



MFV104 - VELOCITY ADJUSTER



CLP005 - ADJUSTER C-CLIP

SWIVEL
ASSEMBLY



ORN01470BU - SWIVEL O-RING



MFV108 - VERTICAL REGULATOR
SWIVEL

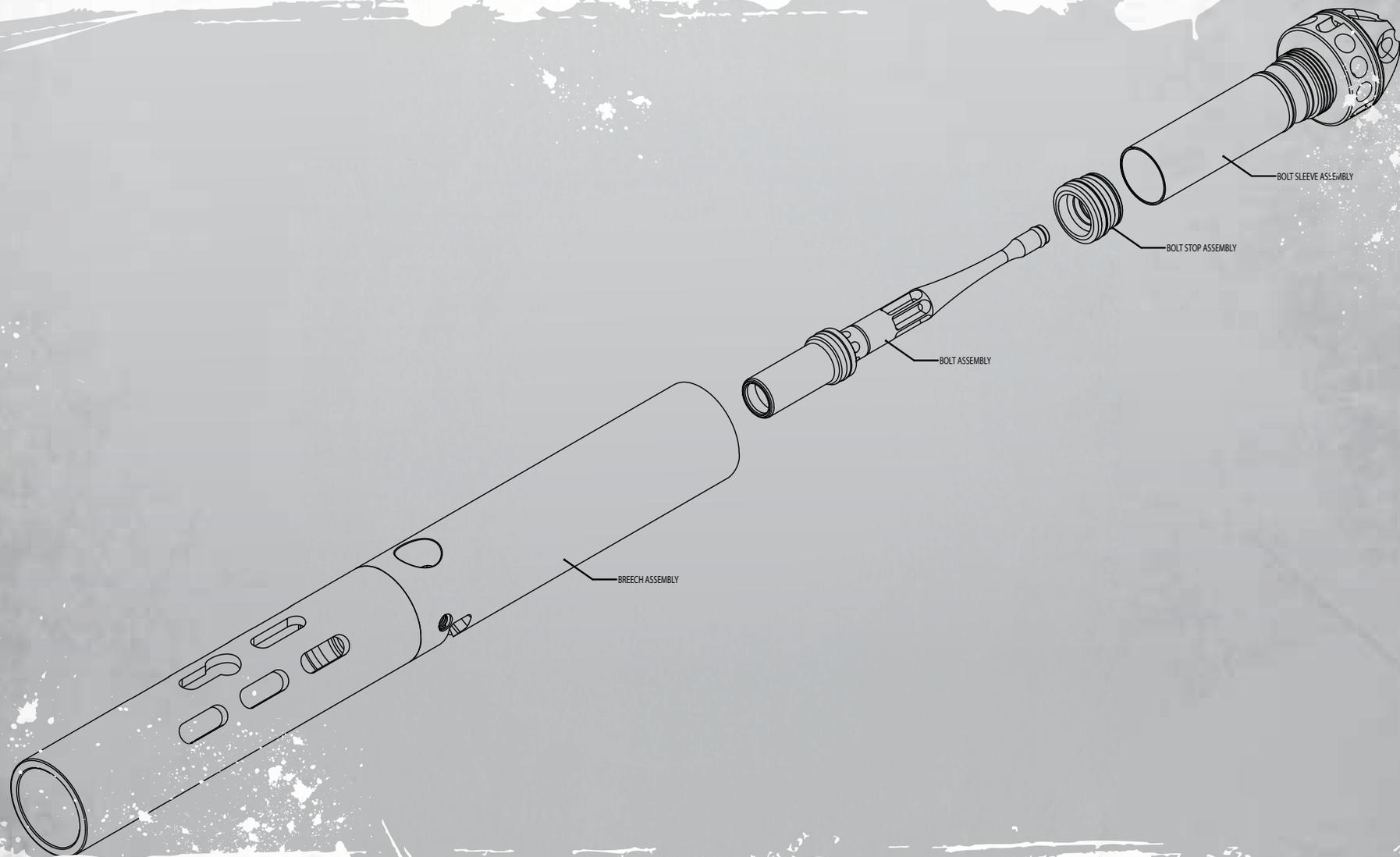


ORN01470BU - SWIVEL O-RING

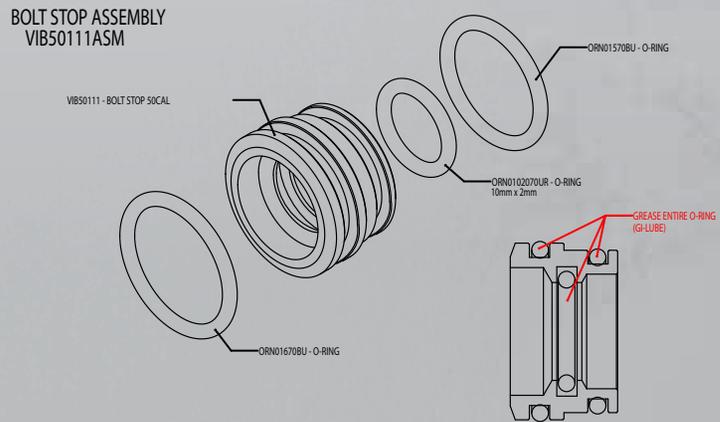
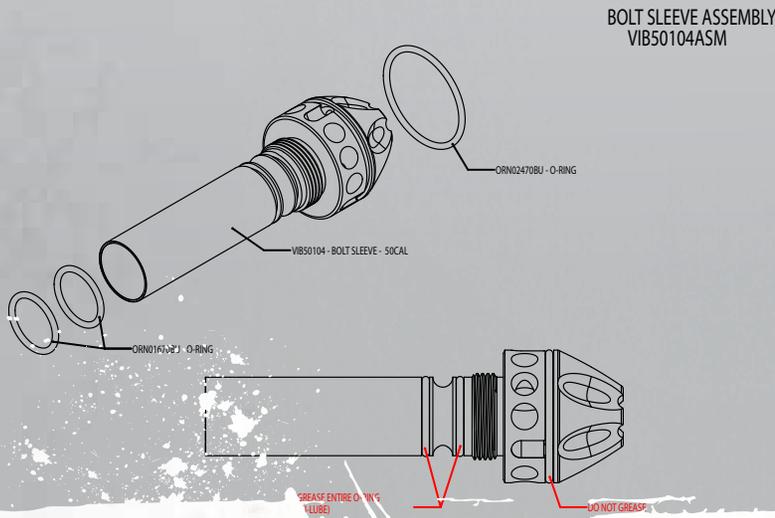
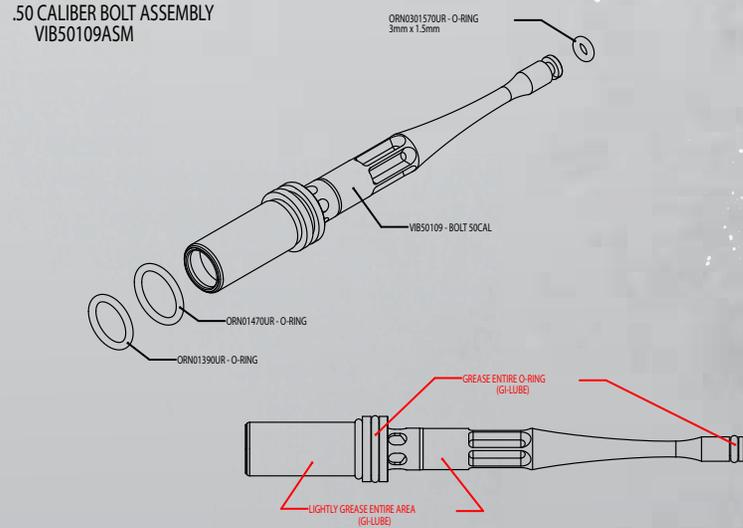
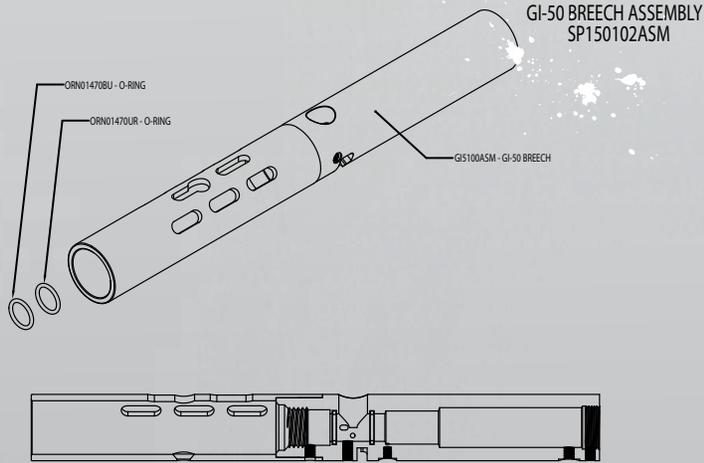


CLP006 - SWIVEL C-CLIP

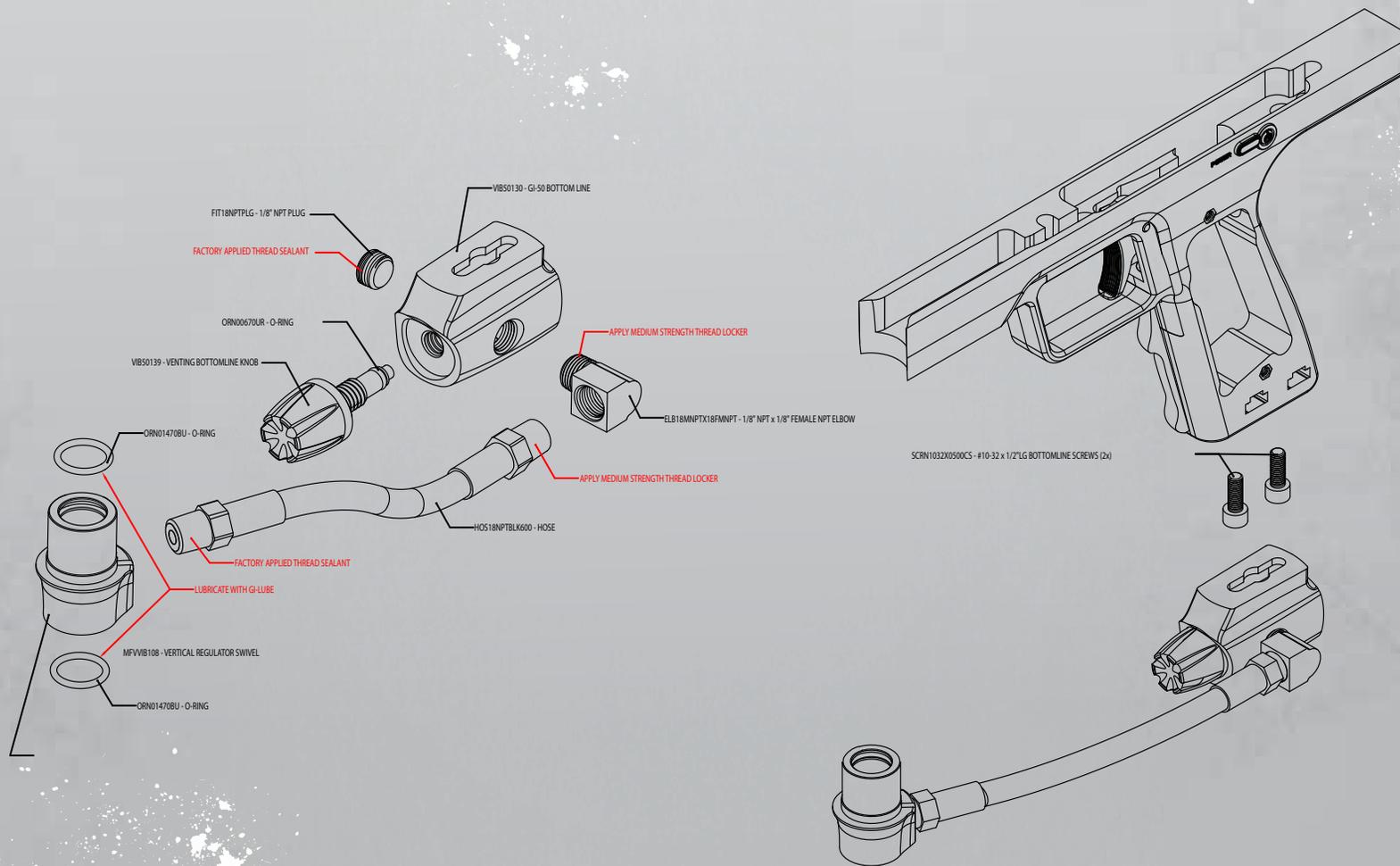
22 PARTS DIAGRAMS



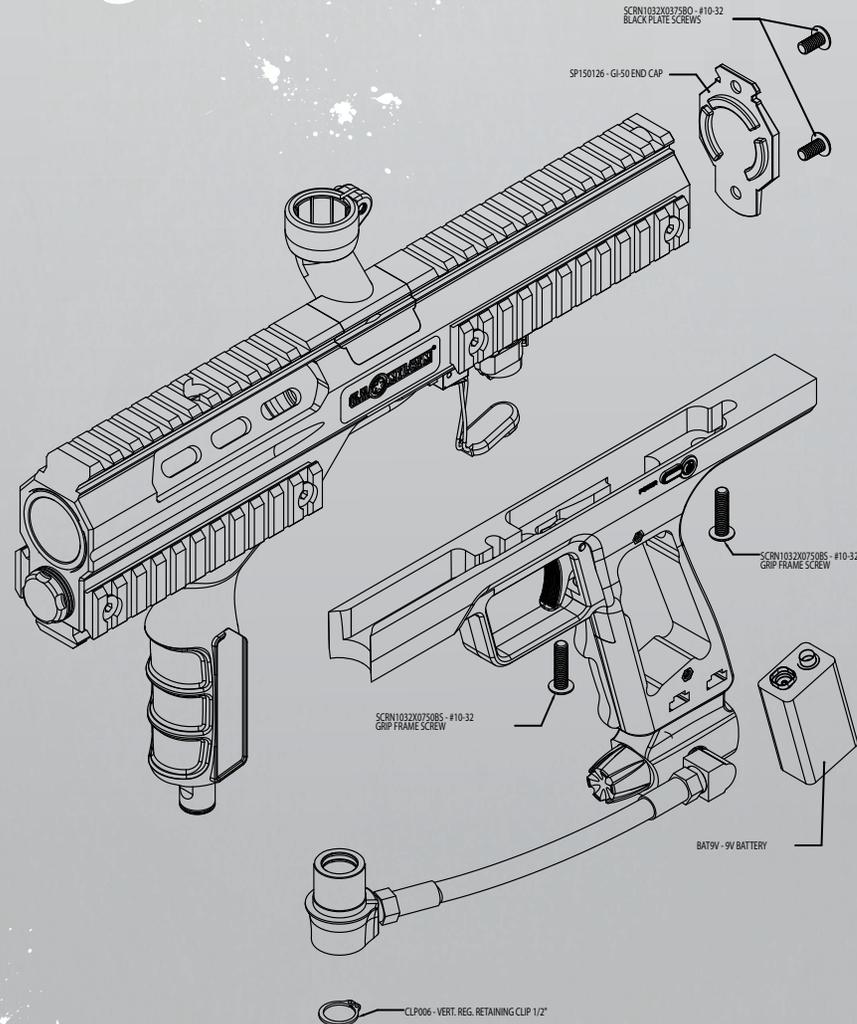
23 PARTS DIAGRAMS



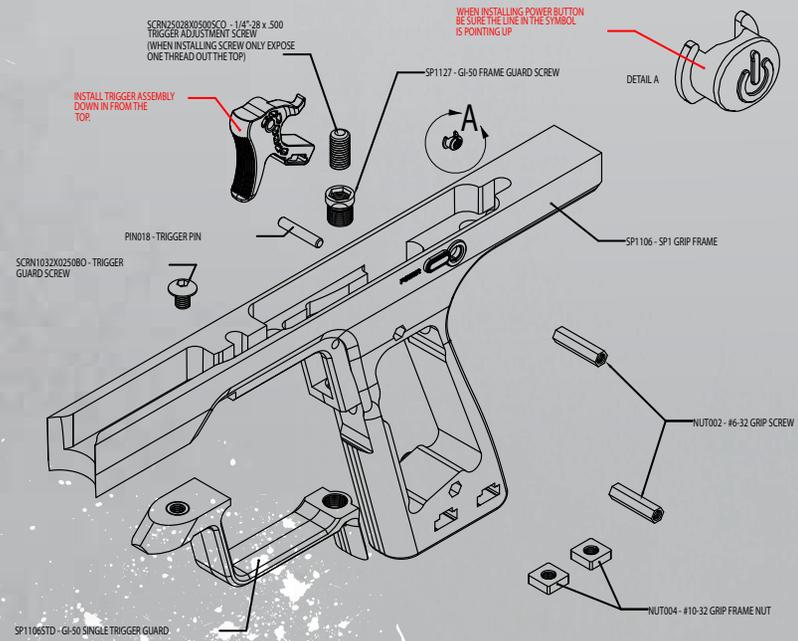
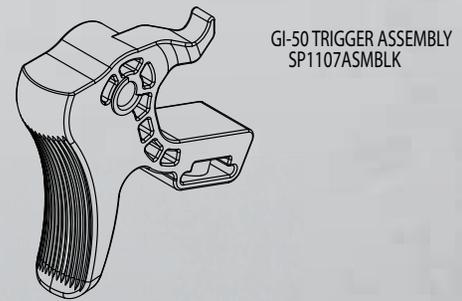
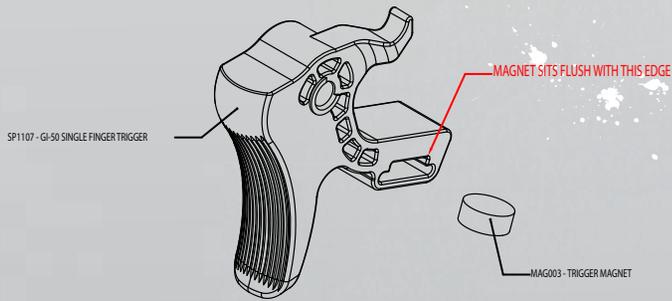
24 PARTS DIAGRAMS



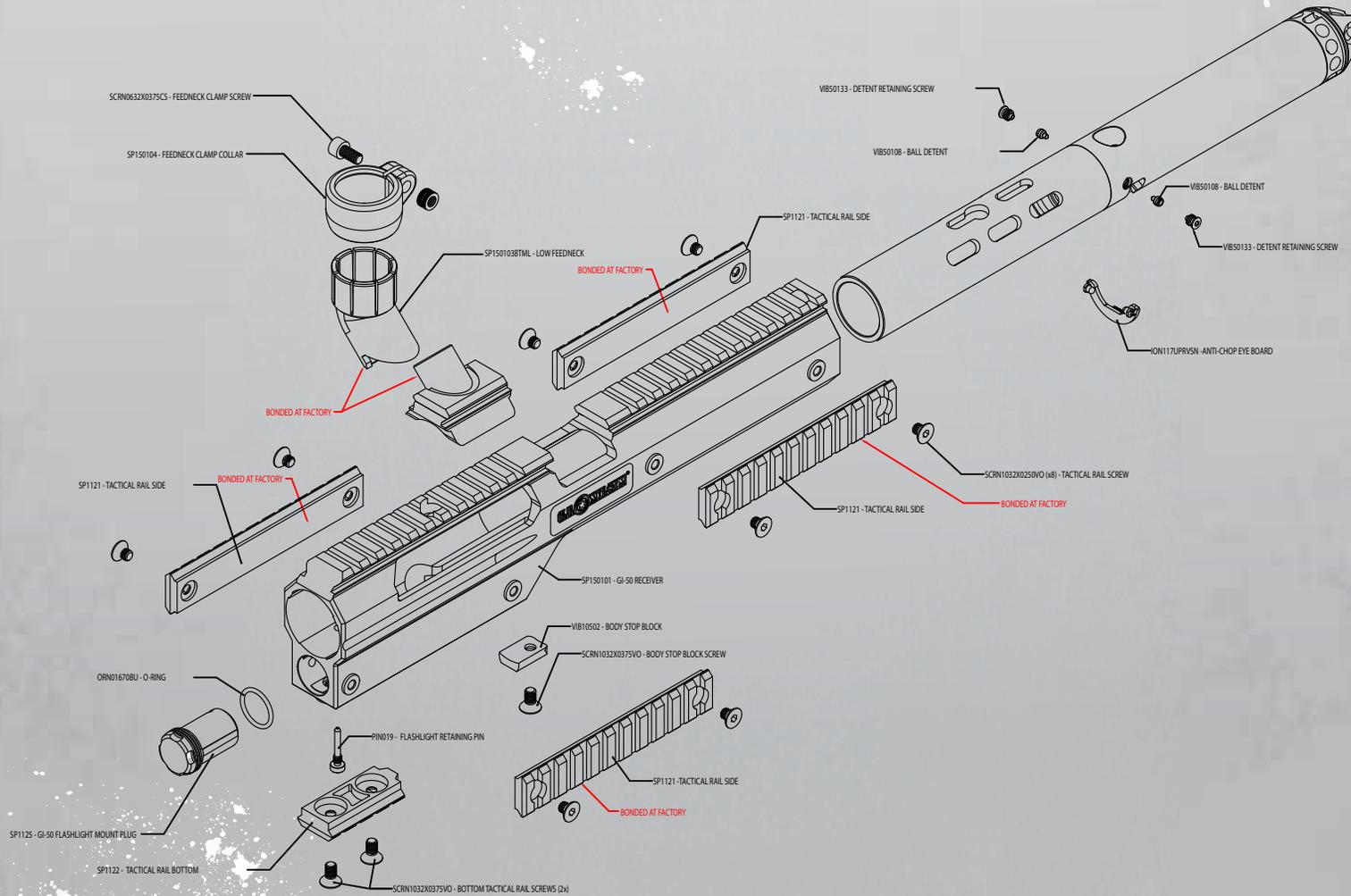
25 PARTS DIAGRAMS



26 PARTS DIAGRAMS



27 PARTS DIAGRAMS



28 | TECHNICAL SUPPORT WARRANTY &

WARRANTY

G.I. Milsim warrants for one (1) year to initial retail purchaser that the paintball marker and regulator are free from defects in materials and workmanship. Disposable parts (batteries, o-rings, seals, springs, etc.) are not warranted. The valve assembly is warranted for six (6) months. The solenoid and electronics on the marker are warranted for six (6) months, plus an additional warranty of six months for electronic parts only (installation and labor are not included). This warranty does not cover surface damages (scratches and nicks), misuse, improper disassembly and re-assembly, attempts made to drill holes or remove metal or polymer from any surfaces which could degrade performance and reduce pressure safety factors of the marker. Do not make changes to the marker without written approval. The only authorized lubricant for the marker is GI-LUBE from G.I. Milsim. Use of any other lubricant could result in voiding your warranty. Paintball markers are non-refundable. This warranty is limited to repair or replacement of defective parts with the customer to pay shipping costs. The warranty is non-transferrable. Do not attempt to alter the trigger assembly in any way, as this will void your G.I. Milsim warranty. Trigger alteration of any kind may result in serious injury. Replacement or alteration of regulator(s) will void warranty and may result in serious damage and or injury.

To obtain warranty support, your marker must be registered with G.I. Milsim. Register electronically at

www.GIMilSim.com/warranty. If you have questions or require assistance with warranty registration, e-mail G.I. Milsim at warranty@GIMilSim.com.

TECHNICAL AND WARRANTY SUPPORT

Technical and warranty support for your G.I. Milsim marker may be obtained through your local dealer or through G.I. Milsim. In all cases, **markers will not be accepted for repair unless a Return Materials Authorization number (RMA) is obtained prior to shipment** via www.GIMilSim.com/service or by sending an e-mail to service@GIMilSim.com. Additional support and downloadable product manuals are available through GIMilSim.com



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