



G.I. MILSIM
NANO



00 QUICK START

BARREL BLOCKER

Unpack the GI-Nano 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.

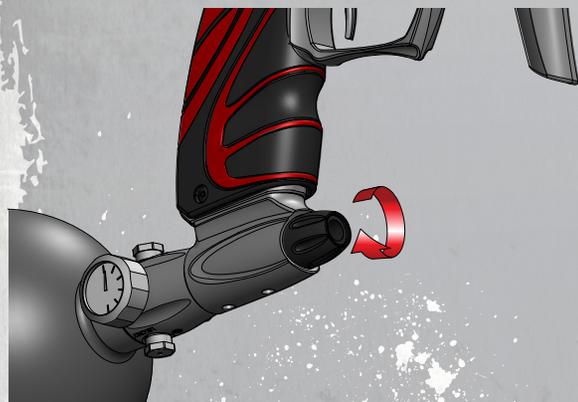


⚠ WARNING

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.

TURN ON GAS

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



ATTACH TANK

The GI-Nano 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-Nano's grip frame. See the gasses section of this manual for more information on optimal configuration of the GI-Nano 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-Nano turns on, the power button will blink 5 times rapidly with its color indicating the charge level of its battery.

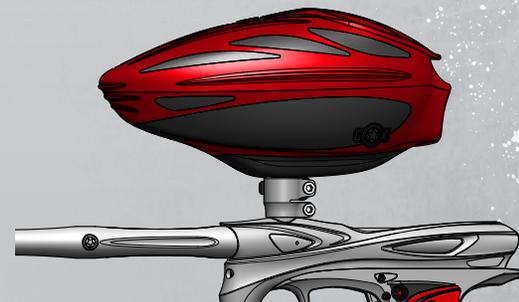
⚠ WARNING

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



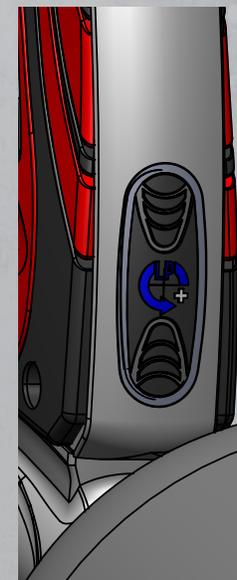
LOADER

Unlatch the feedneck on the GI-Nano and insert a powered 50 caliber loader in place before clamping the feedneck by closing the latch. If there is difficulty fitting the hopper into the feedneck, or closing the clamping latch, see the Loader section of this manual for additional information.



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 3/32-inch allen wrench through the adjuster panel on the rear of the grip frame, turn counter-clockwise to increase the velocity/pressure, and clockwise to decrease. Adjust until the marker is firing consistently within the limits for the field where you are playing (for safety reasons, never adjust the GI-Nano 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-Nano's firing mode. See the Electronic Adjustment section for more information.



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- THE GI-NANO IS NOT A TOY.
- MISUSE OF THE GI-NANO 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-NANO.
- G.I. MILSIM RECOMMENDS THAT THE GI-NANO ONLY BE SOLD TO PERSONS 18 AND OLDER.
- THOROUGHLY READ THE GI-NANO 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 OF THE TRIGGER UNTIL READY TO SHOOT. NEVER POINT THE GI-NANO AT ANYTHING YOU DON'T WISH TO SHOOT.
- KEEP THE GI-NANO ON SAFE (POWER OFF) UNTIL READY TO SHOOT. (SEE QUICK START)
- KEEP THE BARREL BLOCKING DEVICE ON THE GI-NANO'S MUZZLE WHEN NOT SHOOTING. (SEE BARREL BLOCKER SECTION)
- ALWAYS REMOVE PAINTBALLS AND DEGAS THE GI-NANO BEFORE DISASSEMBLY. (SEE DEGASSING SECTION.)
- STORE AND TRANSPORT THE GI-NANO 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-NANO BEFORE USE, AND NEVER ADJUST TO FIRE ABOVE 300FPS (91.44 M/S).



02 GETTING FAMILIAR

→ STATISTICS

LENGTH/WEIGHT:	8.4 inches / 1.64 lbs
OPERATING PRESSURE:	140-160 psi
PAINTBALLS:	.50 caliber G.I. Milsim
POWER SOURCE:	9-volt alkaline battery
PROPELLANT:	CO ₂ or Nitrogen/Compressed air
RATE OF FIRE:	20 bps in 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 Sensor
BARREL THREAD:	Milsim
GAS EFFICIENCY:	2400+ shots (68ci, 4500psi tank),
LUBRICANT:	GI-LUBE

MAINTENANCE AND MOISTURE

The GI-Nano 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-Nano after each day of use. Rain, drizzle or foggy weather will not harm your GI-Nano or prevent it from functioning. Although the GI-Nano is built 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-Nano 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

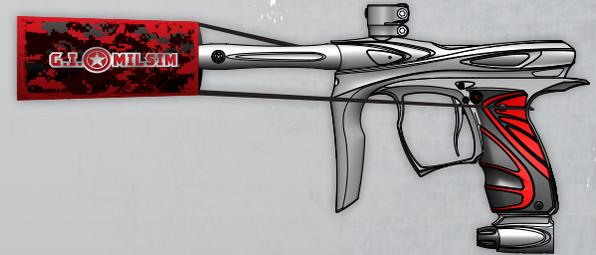
The Barrel Blocker should only be removed when the marker is on a "live" paintball field and all persons involved are wearing proper paintball protection.

HOPPER

The GI-Nano is a high-performance electropneumatic paintgun. Although its 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-Nano's clamping feedneck locks the hopper in place, keeping it with you through the game. Using a 1/8-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



HOPPER



04 | PAINTBALLS & GASES

WARNING

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

PAINTBALLS

The GI-Nano 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-Nano is designed 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-Nano'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-Nano 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-Nano. Liquid CO₂ is heavier than CO₂ gas, making it simple to control.



05 | GASES CONTINUED

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-Nano'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-Nano.

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-Nano, the CO₂ tank's valve is facing upwards, away from the liquid CO₂.

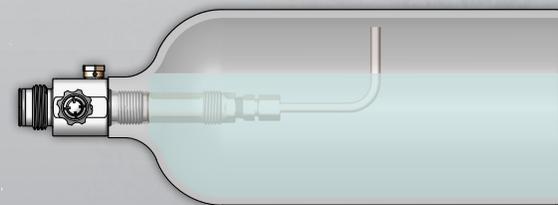
COMPRESSED AIR

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-Nano.

The GI-Nano should be used with screw-in style HPA systems pre-set to deliver a pressure of approximately 800 psi – commonly referred to as high-output HPA systems. Due to its low operating pressure, the GI-Nano can also be powered by low-output (450 psi) HPA systems. If used with an adjustable output HPA system, it should be adjusted to deliver approximately 800 psi.

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

ANTI-SIPHON



06 AIR SYSTEM ADAPTER

AIR SYSTEM ADAPTER

The bottomline Air System Adapter, or ASA accepts screw-in refillable CO₂ tanks or HPA systems. Its hose-free design means that there are no hoses or hose fittings to catch on brush, rupture or leak. 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-Nano. Turning the knob counter-clockwise closes the valve and releases pressure from the ASA.

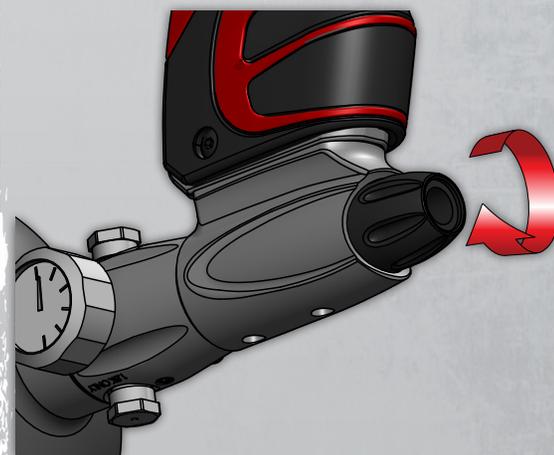
⚠ WARNING

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

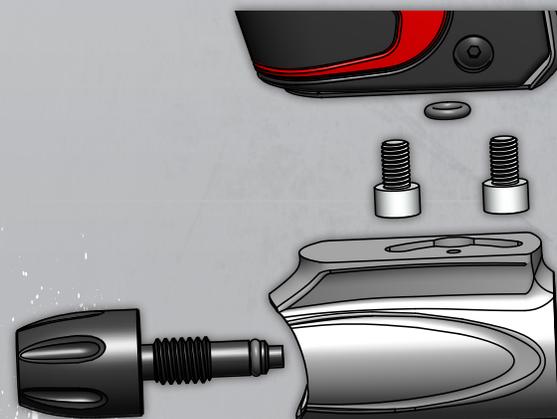
The ASA is attached to the grip frame by a pair of paintball industry standard 10-32 grip accessory mount screws. For maintenance or configuration, the ASA can be removed by unloading and degassing the GI-Nano, then completely unscrewing and removing the control knob. While the control knob is out, its 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.

When the ASA is removed from the GI-Nano grip frame, take care not to lose the integrated air o-ring that creates a seal for the air path between the ASA and grip frame. This o-ring must be clean and dust free to prevent leaks.

ASA



REMOVING ASA

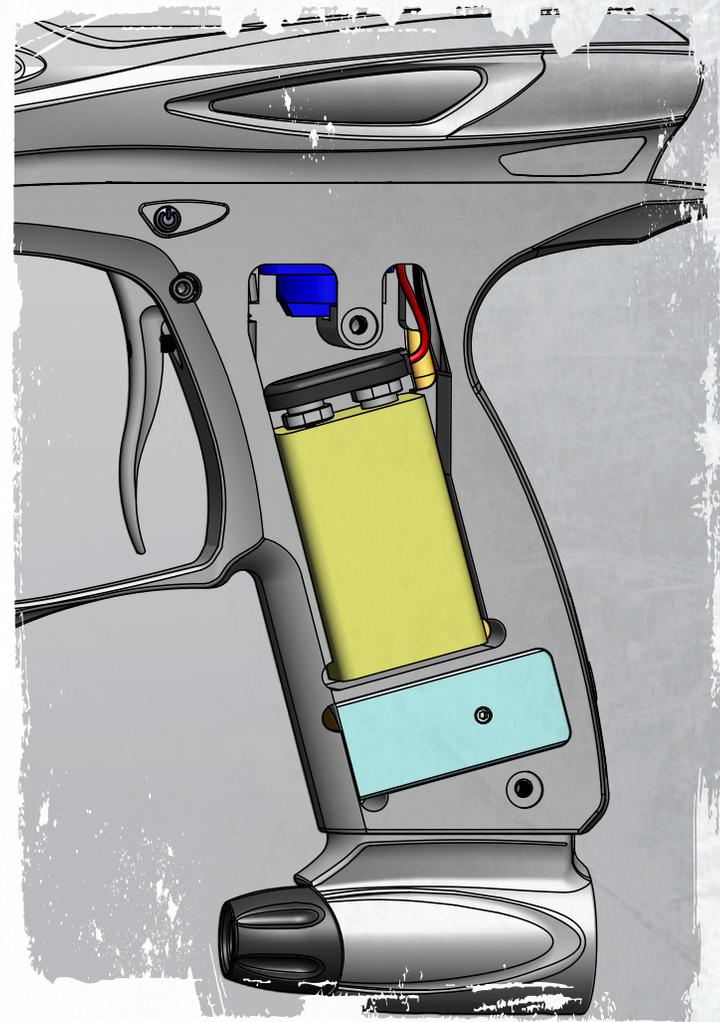


07 | ALL ABOUT THE BATTERY

BATTERY

The GI-Nano is powered by a standard 9-volt alkaline battery. A G.I. Milsim rechargeable battery may also be used. Lower cost “heavy duty” batteries will not consistently deliver the amperage needed to operate the GI-Nano. 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-Nano 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



08 | ELECTRONIC ADJUSTMENT

WARNING

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

ELECTRONIC ADJUSTMENTS

Power

The GI-Nano is turned on by pressing the power button. As the GI-Nano 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 75 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-Nano indicates it is low. If the GI-Nano exhibits trouble firing, one of the first troubleshooting steps should be to install a fresh, brand name alkaline battery.

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

Anti-Chop Eyes

The GI-Nano uses its 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-Nano 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-Nano 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 blink red to indicate that it has been locked or green to indicate that it has been unlocked.

Programming the GI-Nano

Several aspects of the GI-Nano'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-Nano'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-Nano 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-Nano off. **(9.)** After programming and testing the GI-Nano, it is advisable to re-activate the field-lock.



09 | ELECTRONIC ADJUSTMENT FIRING MODES

ELECTRONIC ADJUSTMENTS

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

Firing Mode (Solid Red) This parameter sets the GI-Nano's firing mode:

Semi-Automatic: One shot per trigger pull. This mode is not affected by the GI-Nano's BPS cap and is the default firing mode.

Capped Semi-Automatic: This mode operates the same as semi-automatic, only it will not fire faster than the 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-Nano reverts to firing one shot per trigger pull.

Auto-Response: Fires both when the trigger is pulled and when it 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.

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

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.

Pump-Sim: The GI-Nano fires one shot per trigger pull, restricted to extremely low rates of fire, for playing on an even footing against new paintball players, players with Pump-Sim equipped markers, or paintball players with pump-action markers. Pump-Sim games offer a less intimidating introduction to paintball for new players, and a game style similar to the early days of paintball, relying more on movement and stealth than high volume firing.

NOTE GI-NANO MARKERS SOLD IN THE
UK ARE LIMITED TO THE FOLLOWING MODES:

1 - SEMI-AUTOMATIC, 2 - CAPPED SEMI,
3 - MILLENNIUM, 4 PUMP-SIM



10 | ELECTRONIC ADJUSTMENT CONTINUED

WARNING

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

Dwell (Solid Green) Adjusts how long the solenoid valve is held open to fire each shot. Dwell is adjustable from 1 to 60 milliseconds in 1 ms increments. For best performance unload and dry-fire (with gas) the GI-Nano while wearing paintball goggles, with the barrel blocker in place, in an area where it is safe to fire markers (such as the chronograph range at a paintball field). Lower the dwell until the bolt will not cycle full, then raise it until the bolt fully closes and makes a full volume shooting sound. Raise the dwell an additional 5 to 7 milliseconds to ensure consistency, or more if FSDO or inconsistent velocity is a problem.

BPS Cap (Solid Yellow) In all modes except semi-automatic, this setting limits the marker's maximum rate of fire between 5 and 20 balls per second.

BPS Fine Adjust (Solid Blue) 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 marker 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.

FSDO (LED: *Solid White*) The GI-Nano is equipped with a First Shot Drop Off (FSDO) compensation function. Sometimes the pneumatics system in a marker will bind slightly when it is not fired for a period of time, resulting in a slower response. If the marker starts firing slower than normal, the dwell time will have expired before the valve has been fully opened. FSDO compensation corrects this problem by increasing the dwell time on the first shot in a string that is fired after the marker has been at rest. The FSDO parameter sets how much the dwell time will be increased for the first shot and is adjustable between 0 and 15 milliseconds.

Loader Debounce (LED: *Slow Blink Red*) For reliability, the anti-chop eye is located mid-way in the GI-Nano's breech, meaning that it will detect a paintball before the ball is completely seated. The Loader Debounce setting specifies how long the marker will wait after first detecting a paintball before firing in order to allow the paintball to fully seat itself. Loader Debounce is adjustable from 0 to 10 milliseconds.

Trigger Debounce (LED: *Slow Blink Green*) The operating software in the GI-Nano filters out electronic noise caused by the contacts in the trigger switch. Trigger Debounce sets the minimum length of time a signal must be detected in order to be considered a valid trigger pull. Trigger Debounce is adjustable from 1 to 10 milliseconds. CAUTION: Setting trigger debounce too low may result in the marker firing more than one shot per full pull of the trigger and may not be allowed under some tournament or field rules.

Auto Off (LED: *Slow Blink Blue*) To conserve its battery charge, the GI-Nano will turn itself off when it is unused for an extended period of time. The amount of time to auto-shutdown is adjustable from 5 to 39 minutes in one minute increments.

Anti-chop Mode (LED: *Slow Blink White*) How the anti-chop system responds when the trigger is pulled and no paintball is loaded depends on the configuration of this parameter. At a setting of 1 (default) the marker is in classic anti-chop mode and will only fire if a paintball has been detected. A setting of 2 is delayed anti-chop and will wait up to half a second to detect a paintball before firing. A setting of 3 selects forced anti-chop which will not fire without a paintball in the breech unless the trigger is pulled and held for a full second.

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-Nano will accept that as a zero, then return to the power button color and blink code indicating the current parameter.



11 | ELECTRONIC ADJUSTMENT CONTINUED

WARNING

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

Bypass ROF (LED: *Slow Blink Purple*) Regardless of the selected firing mode, this lower rate of fire cap will be used when the anti-chop system is turned off. Bypass may be set from 6 to 12 balls per second.

Pulls To Enter (LED: *Fast Blink Red*) This parameter sets the number of consecutive trigger pulls that must be made at the Sustain Rate in order for the Ramping firing mode to activate and fire more than one shot per trigger pull. This parameter may be set from 1 to 5.

Sustain Rate (LED: *Fast Blink Green*) This is the rate at which the trigger must be pulled to activate and remain in the Ramping firing mode. The Sustain Rate is adjustable from 2 to 10 pulls per second.

Burst Duration (LED: *Fast Blink Yellow*) The Burst Duration parameter specifies the number of shots per trigger pull-and-hold that the GI-Nano will fire in burst mode. This parameter may be set from 2 to 4 shots.

Pump-Sim ROF (LED: *Fast Blink Blue*) This parameter sets the extra low Rate Of Fire Cap that is used in the Pump-Sim firing mode. The Pump-Sim ROF may be set from 0.5 to 2 balls per second (1=0.5bps, 2=1.5bps, 4=2bps).

FACTORY RESET

The GI-Nano circuit board can be quickly and easily reset to all of its factory default values. While the board is unlocked, and the marker is unloaded and degassed, hold down the trigger and press the power button. Continue holding the trigger for ten seconds until the status LED flashes white. Release the trigger and all parameters will have been reset to their default values.



12 TRIGGER ADJUSTMENT

TRIGGER ADJUSTMENT

The GI-Nano trigger is adjustable in three ways, making it completely customizable.

The GI-Nano trigger and its bearings are suspended between a pair of conical mount screws in the grip frame at the trigger's pivot point. Minor adjustments to these screws can ensure that the trigger is centered and not rubbing against the grip frame.

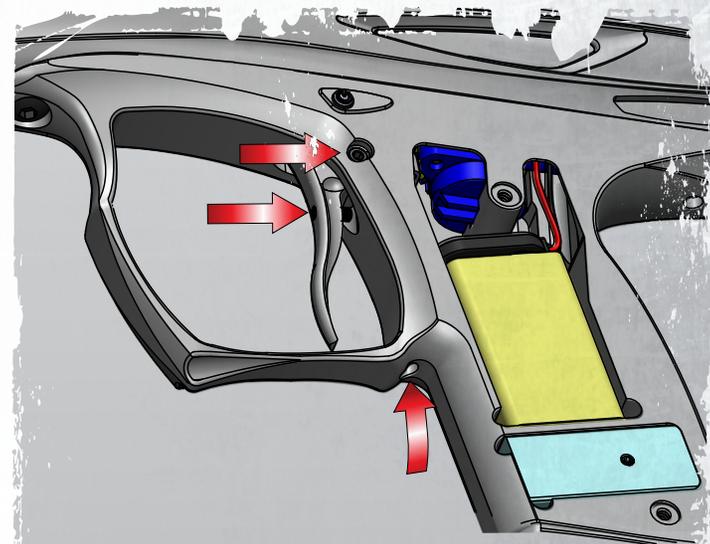
A setscrew in the trigger just below its pivot point limits how far back the trigger can be pulled. Turning the screw clockwise with a 0.050-inch allen wrench will shorten the length of the trigger pull, while turning counter-clockwise will increase it. It is important that the trigger not be adjusted too short to activate the microswitch on the GI-Nano circuit board. Keeping the trigger adjusted so that the trigger stops on the screw just after it activates the switch will minimize stress on the microswitch and circuit board, ensuring their longest possible service life.

How far forward the trigger can swing is also adjustable with a 1/8-inch allen wrench. The forward 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-Nano will not be able to reset, resulting in the marker not firing.

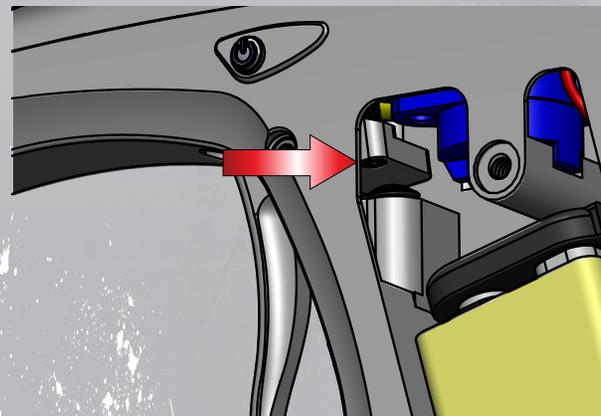
The precise point in the trigger pull where the GI-Nano fires is also adjustable. This adjustment screw is on the rear half of the trigger, inside the grip frame. To set it, the rubber grip must be removed and the short end of a 0.050-inch allen wrench used to turn the screw. Turning clockwise will cause the GI-Nano to fire earlier in the trigger pull and turning counter clockwise will require the trigger to be pulled further back before it will fire. Like the other two adjustments, the activation point adjustment screw must be set to a position that allows the microswitch inside the GI-Nano to reset when the trigger is released, and does not allow excessive force to be applied to the switch.

IMPORTANT: The GI-Nano trigger must be adjusted so that when pulled to its rear limit, the trigger comes to a stop with the post-travel adjustment screw pressing on the grip frame. If the post travel adjuster does not stop against the frame, the trigger is being stopped by the activation point adjustment screw pressing against the internal microswitch, and strong trigger pulls may result in damage to the microswitch and or circuit board.

TRIGGER ADJUSTMENT



ACTIVATION SCREW



13 UNLOADING & DEGASSING

UNLOADING AND DEGASSING

⚠ 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-Nano 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-Nano. By turning the GI-Nano upside down, any paintballs in the feedneck can be shaken out.

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

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-Nano 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-Nano 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 GI-NANO

The valve system in the GI-Nano has only one major moving part. Regular cleaning and lubrication is necessary to ensure accurate and consistent performance. The GI-Nano 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-Nano. 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-Nano.

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-Nano 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-Nano.

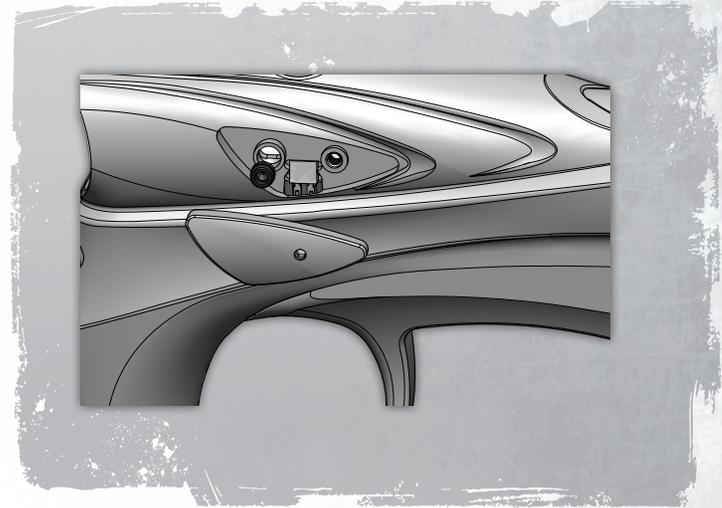
Screw the bolt sleeve into the back of the GI-Nano by hand, taking care not to cross-thread it into the receiver. Use the long end of a 5/16-inch allen wrench and turn the bolt stop until it is snug. Do not use the short end of the allen wrench, as the longer end acting as a handle would create too much leverage, making it easier to over-tighten the bolt sleeve.

15 | SENSOR & DETENT MAINTENANCE

SENSOR AND BALL DETENT MAINTENANCE

The anti-chop sensor covers on either side of the receiver can be removed for cleaning or maintenance by unscrewing the eye cover screw with a 1/16-inch allen wrench. The screw is accessed through a small hole in the eye cover. The eye cover screw can be removed from the eye cover by sliding it out of its slot. It is recommended to leave the screw in place so that it will not become lost. With the eye covers removed, the anti-chop emitter and detector can be cleaned with a cotton swab, and the rubber ball detents can be cleaned and inspected. The detents may be pried out of the receiver with an o-ring pick, and should be replaced if they show significant wear, rips, or do not extend into the breech when reinstalled. Care should be taken when reinstalling the eye covers to not cross thread the eye cover screws. Only the long end of the allen wrench should be used to tighten them snug, not over-tight.

REMOVING DETENT COVER



16 | REGULATOR MAINTENANCE

REGULATOR SERVICE

If the velocity of the GI-Nano is inconsistent when using high-grade G.I. Milsim paintballs and after it has been cleaned, lubricated, and had its dwell optimized, it may be appropriate to clean and inspect its regulator.

Like all service, working on the regulator begins with unloading and degassing the marker. Next, use a 5/64-inch allen wrench to remove the four screws holding the rubber grip to the grip frame, and remove the rubber grip.

Use an o-ring pick to remove the rubber adjuster panel from the back of the GI-Nano grip frame. Beneath the adjuster panel are a pair of screws which must be removed with a 1/8-inch allen wrench.

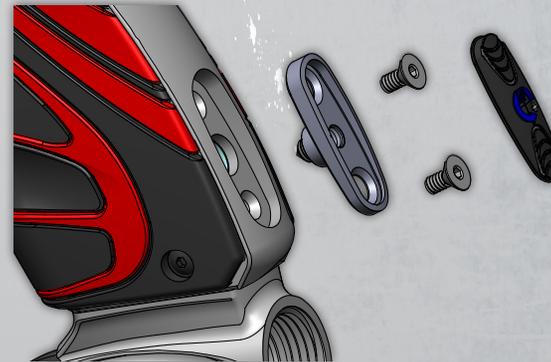
Next, the adjuster screw housing must be removed. If it does not easily lift out, a 3/32-inch allen wrench can be used to turn the velocity adjustment screw clockwise until it forces the adjuster screw housing out of the grip frame.

The regulator may now be slid out of the grip frame. The transfer tube which carries gas from the regulator to the receiver will flex, and simply slide out of the top of the regulator.

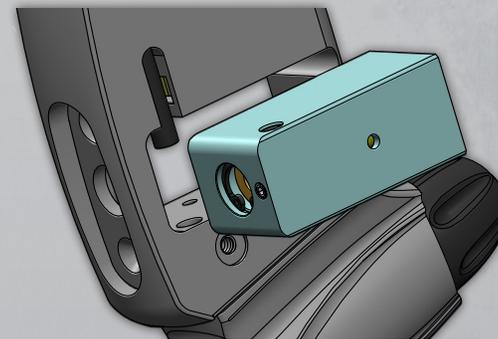
The regulator may be disassembled by tapping one of its back corners on a table to dislodge its piston and spring. A pair of snap-ring pliers may be used on the other end of the regulator to remove the snap ring that holds the regulator seat in place. All o-rings should be inspected for signs of wear, rips or other damage, and if necessary, replaced. All o-rings should be lightly lubricated with GI-LUBE before reassembly.

The GI-Nano regulator is reinstalled by reversing the steps of its removal. The exterior of the bottom of the gas transfer tube should be lightly lubricated with GI-LUBE. Care must be taken when flexing the gas transfer tube out of the grip frame so that it will insert into the regulator as the regulator slides into place.

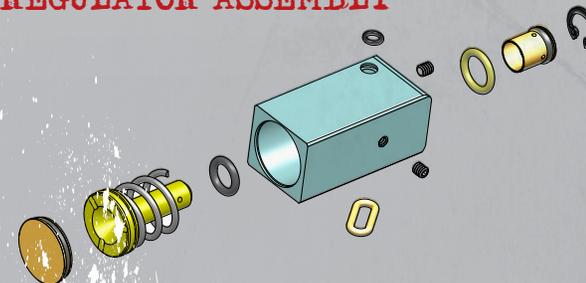
REMOVING PANEL



REMOVING REGULATOR



REGULATOR ASSEMBLY



17 GRIP FRAME & CIRCUIT BOARD REMOVAL

CAUTION: Unnecessary removal of internal pneumatic components can cause the GI-Nano to develop leaks. Only disassemble the GI-Nano beyond field stripping and eye/detent or regulator maintenance when necessary for repair. Once an internal hose has been removed from its barbed fitting, it will have been stretched, and will cause a leak if re-used.

The GI-Nano must be unloaded and degassed before the grip frame can be removed. The rubber grip and battery must be removed, as described in the battery section of this manual.

A 1/8-inch allen wrench is necessary to remove the front and rear grip frame screws. The grip frame may then be carefully slid away from the receiver, taking care not to catch the battery clip in the grip frame. The gas transfer tube should pull free from the receiver, if it instead pulls free from the regulator and begins sliding out of the grip frame, gently pull it from the receiver and reposition it in the grip frame, re-seating its lower end into the regulator.

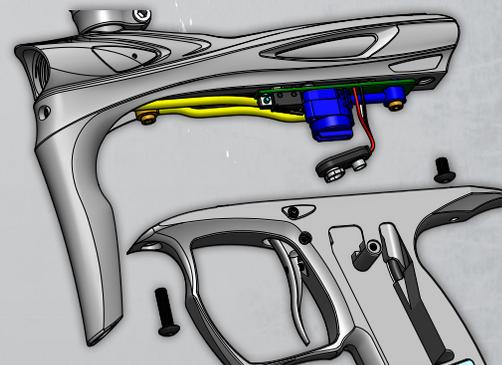
To remove the GI-Nano circuit board and pneumatics assembly, its front and rear banjo fittings must be unscrewed from the receiver with a 1/8-inch allen wrench. The circuit board mount screw must also be removed with a 1/16-inch allen wrench. The anti-chop wiring harness must be unplugged from the circuit board.

If the anti-chop sensors are being replaced, the circuit board and pneumatics assembly should be removed no further, and should remain attached to the receiver by a single hose while the eye covers are removed, and a new emitter and detector set is fitted into place.

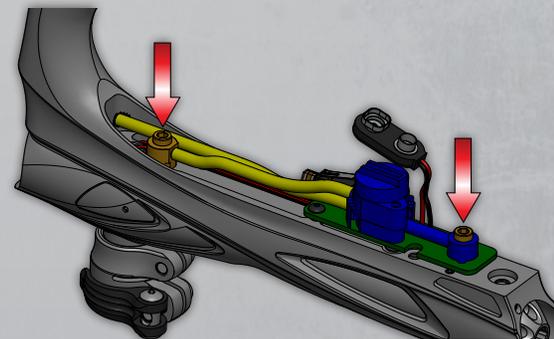
If the circuit board is being replaced, the remaining hose linking it to the receiver should be carefully pulled from its barbed fitting on the GI-Nano solenoid valve. The gas transfer plug in the front of the receiver may be removed with an allen wrench and the hose removed from its fitting as well. A new hose may be installed on the gas transfer plug, the o-rings on which should be inspected and lightly lubricated with GI-LUBE before fitting the hose and transfer plug into place. The hose may then be fitted to the solenoid valve on the replacement circuit board. When reinstalling, or installing new banjo fittings during reassembly, care must be taken to ensure that their o-ring seals are clean and the areas where they attach to the receiver are free of debris. They must not be cross threaded, and should be tightened snugly with the long end of an allen wrench (use of the short end would create unnecessary leverage by using the long end as a handle) with caution against over-tightening. The same care must be taken with the circuit board mount screw.

The exterior of the gas transfer tube should be lightly lubricated with GI-LUBE so that it can slide smoothly into place as the grip frame is joined to the receiver. The battery clip and wires must be guided into the grip frame so that they do not pinch or bind. If the grip frame does not fit easily up to the receiver, it should not be forced, as this may cause permanent damage to hoses or the circuit board. If there is resistance during assembly, back the grip frame off gently, and make sure no hoses or other parts are blocking a proper fit.

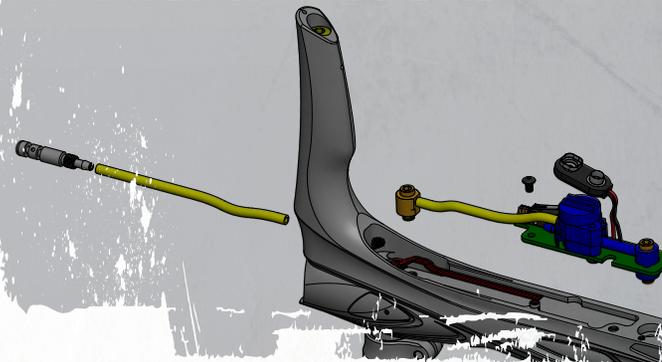
GRIP FRAME REMOVAL



BANJO FITTINGS



TRANSFER PLUG AND HOSE



18 | TROUBLESHOOTING PROBLEMS &

MARKER IS LEAKING INTERNALLY

- 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 IN OR AROUND THE VERTICAL FORE-GRIP

- Gas may occasionally vent near the bottom of the vertical fore-grip, 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 and or damaged. Follow the instructions in this manual or see a technician for service.
- Liquid CO₂ may be entering the regulator – see the gasses section of this manual for guidance in proper CO₂ set-up.



19 | 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.

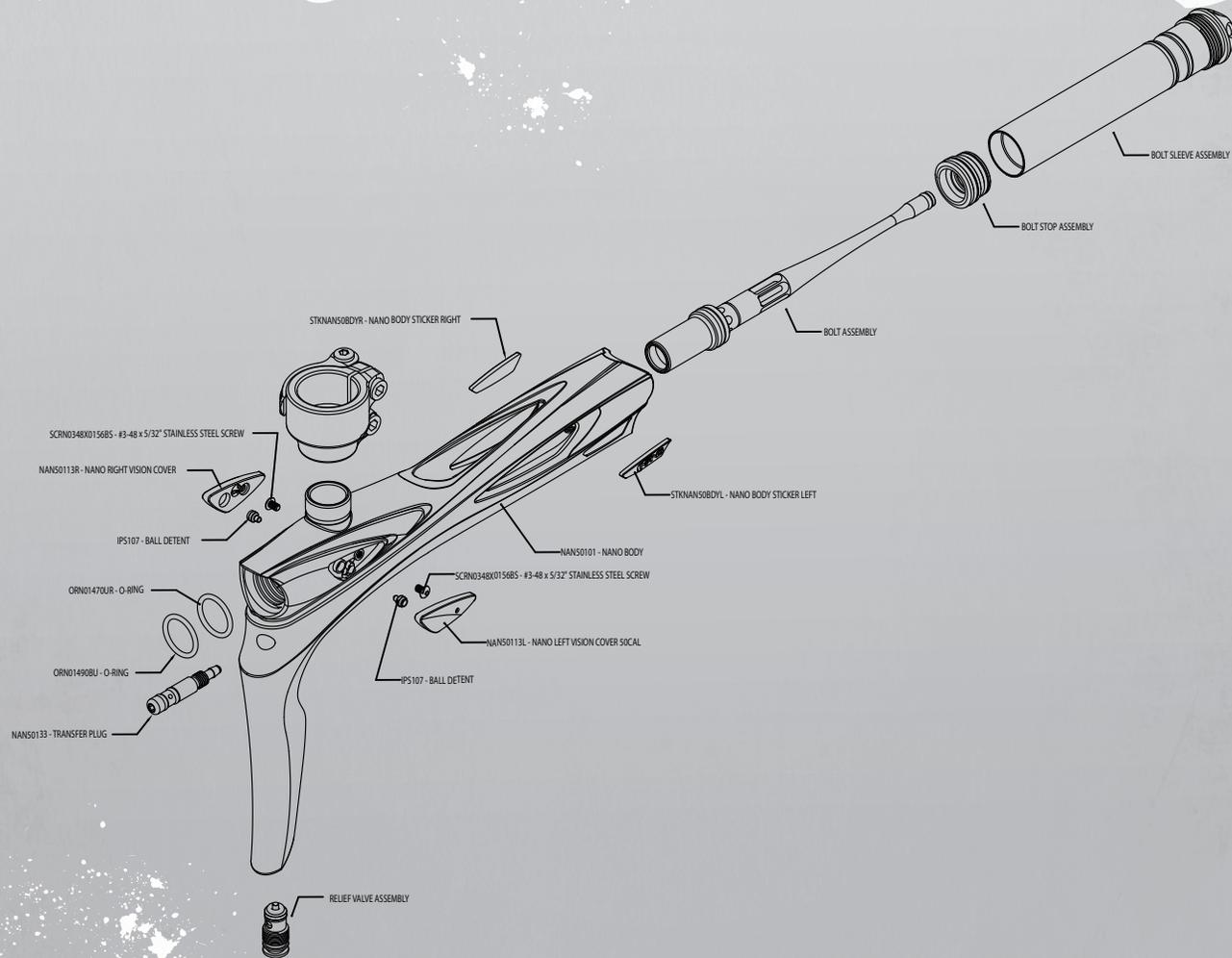
MARKER IS BREAKING PAINT

- 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.
- Anti-chop may be turned off, de-activating the marker's anti-chop eyes. Turn anti-chop back on.

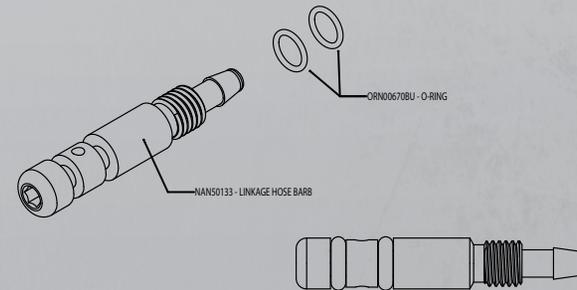
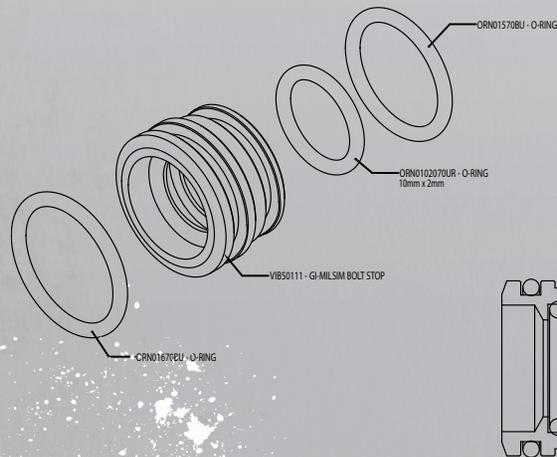
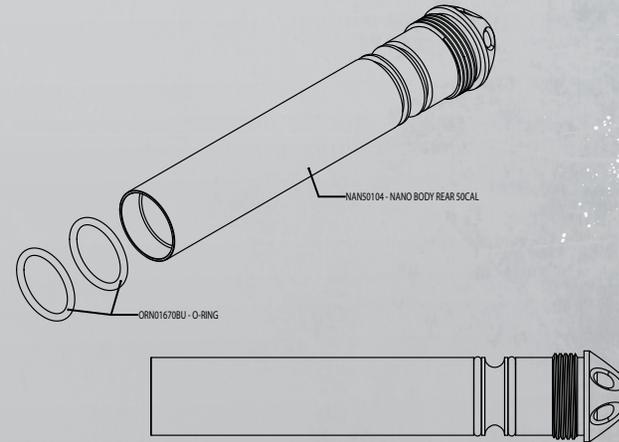
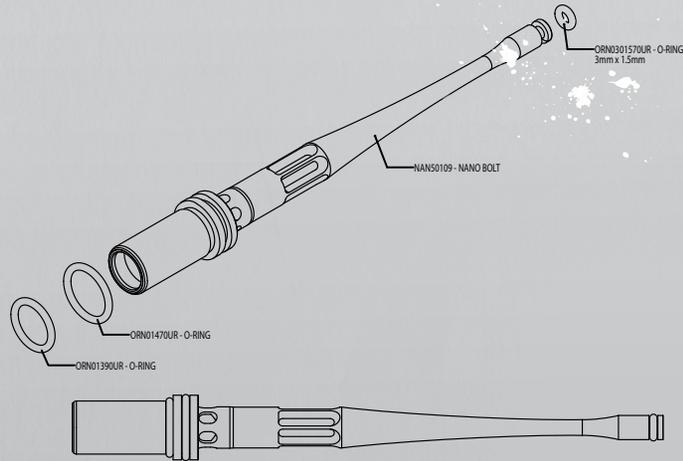
MARKER WILL NOT FIRE RAPIDLY

- 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.

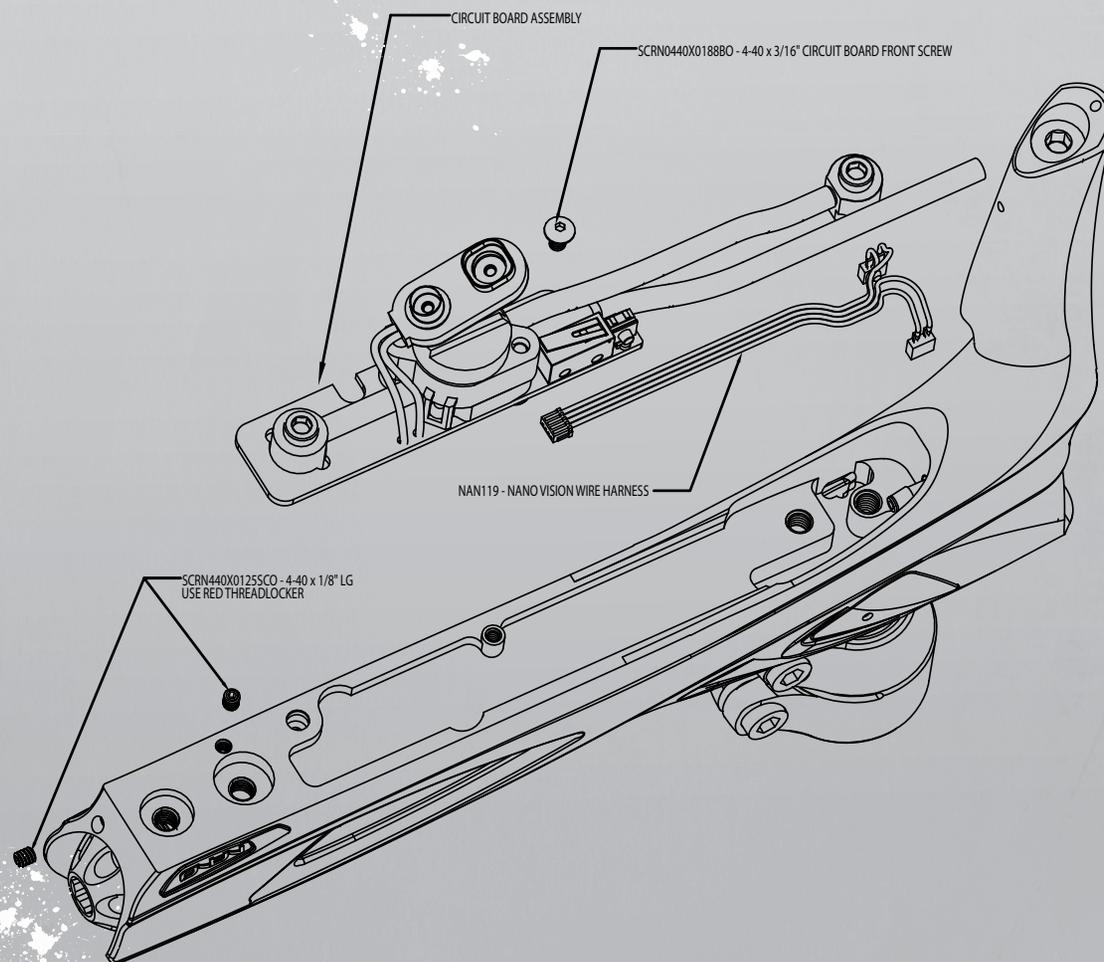
20 PARTS DIAGRAMS



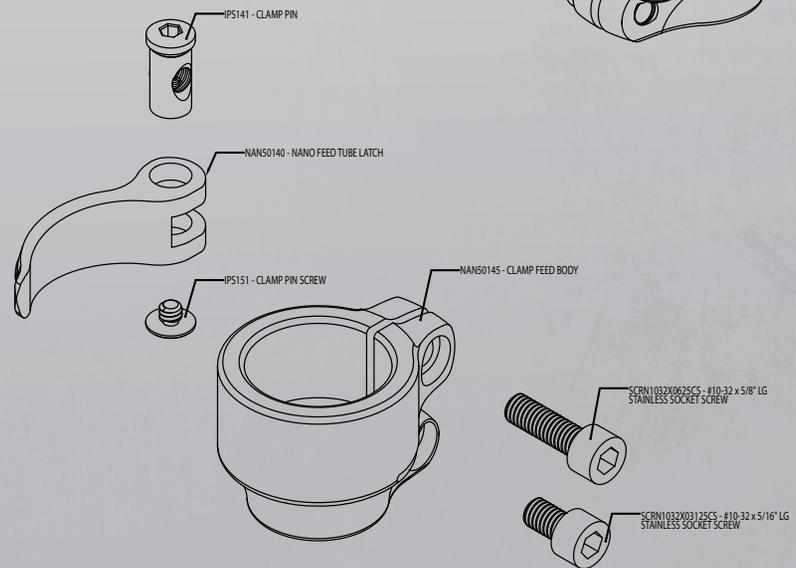
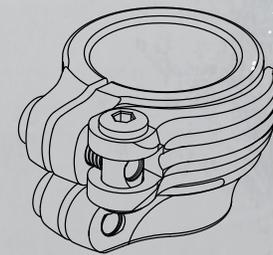
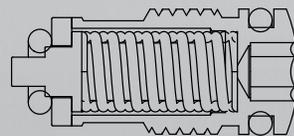
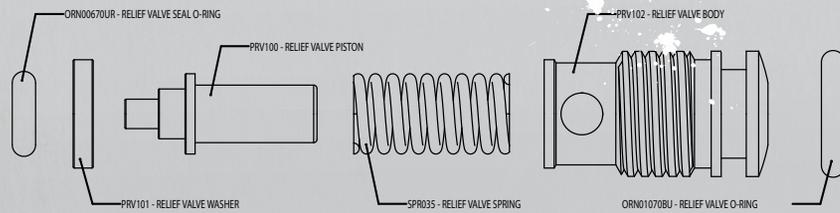
21 PARTS DIAGRAMS



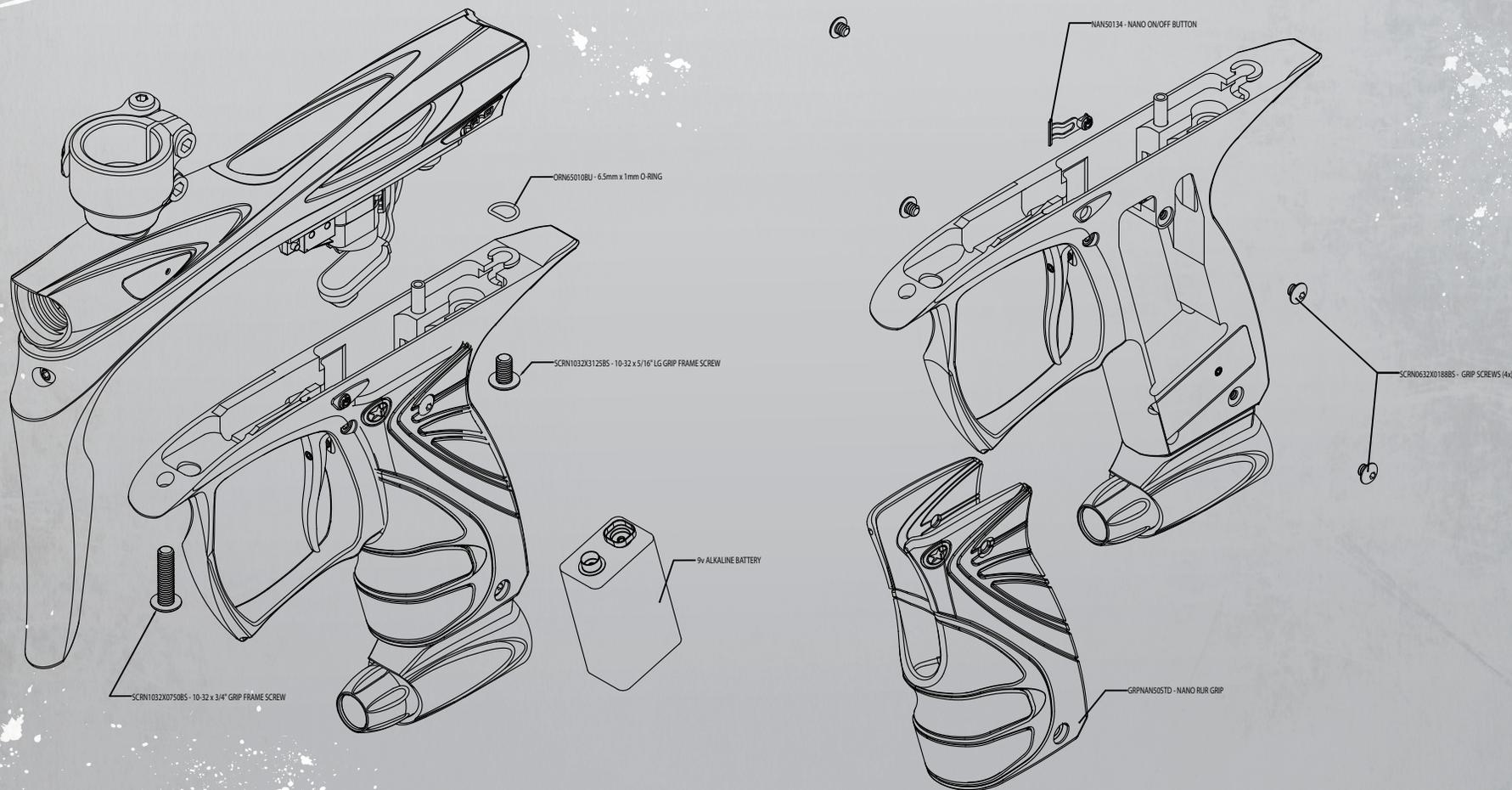
22 PARTS DIAGRAMS



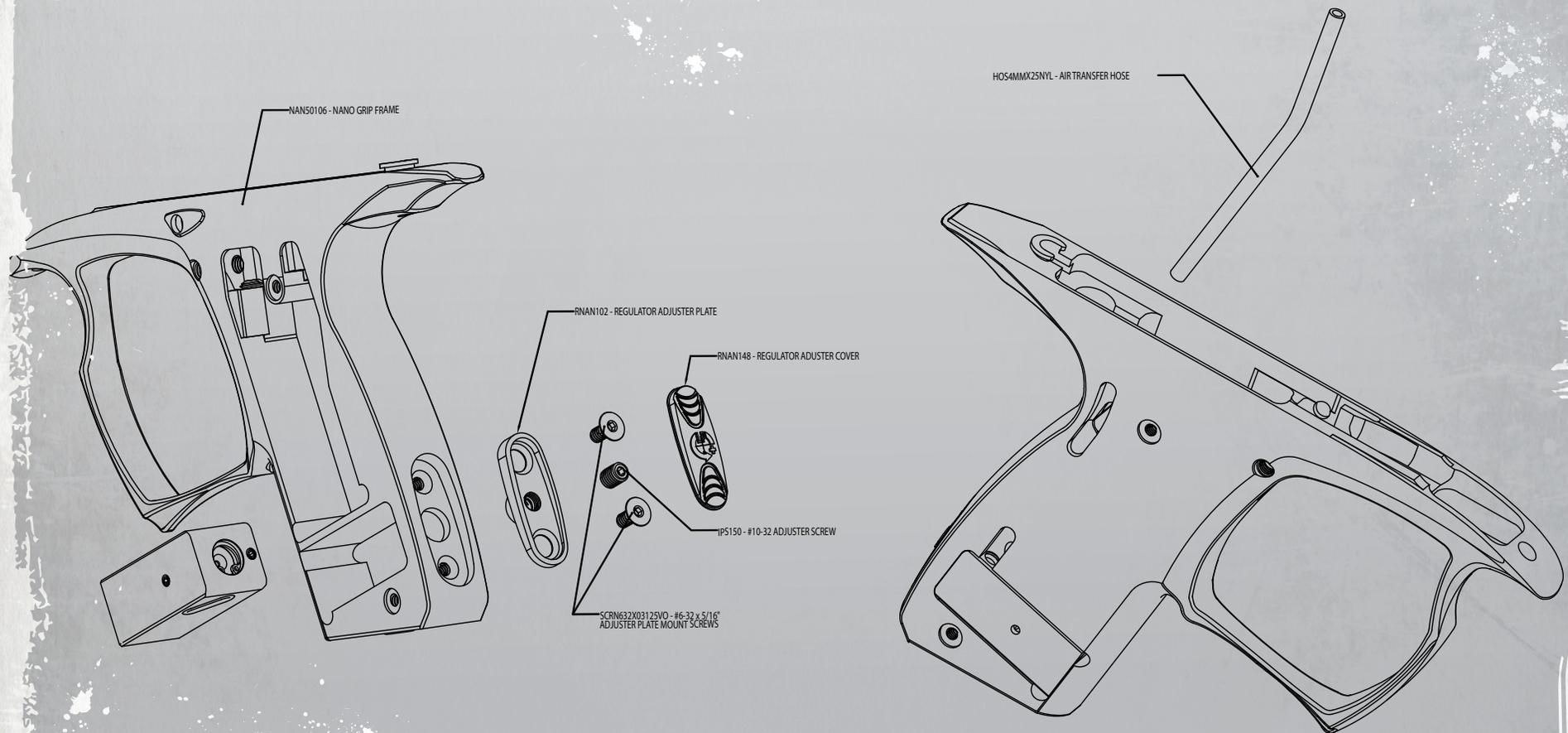
23 PARTS DIAGRAMS



24 PARTS DIAGRAMS

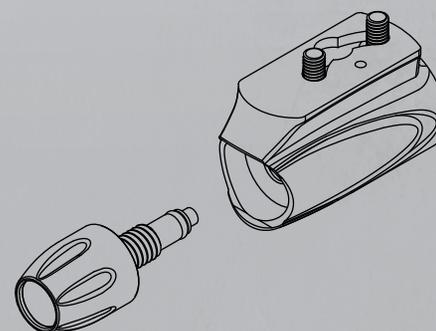
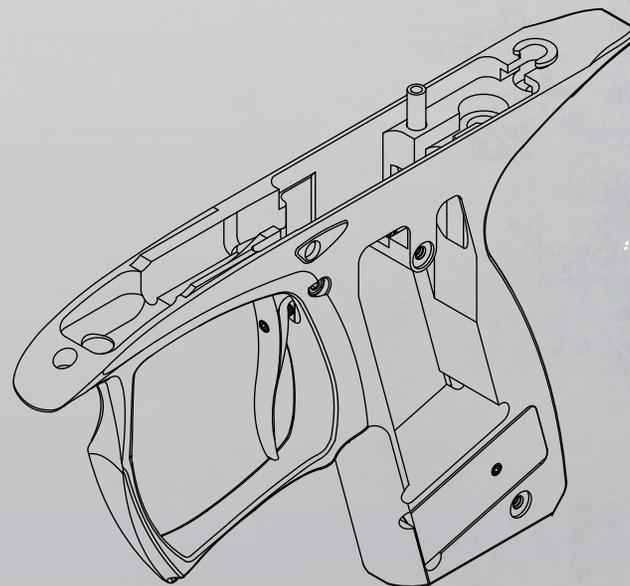
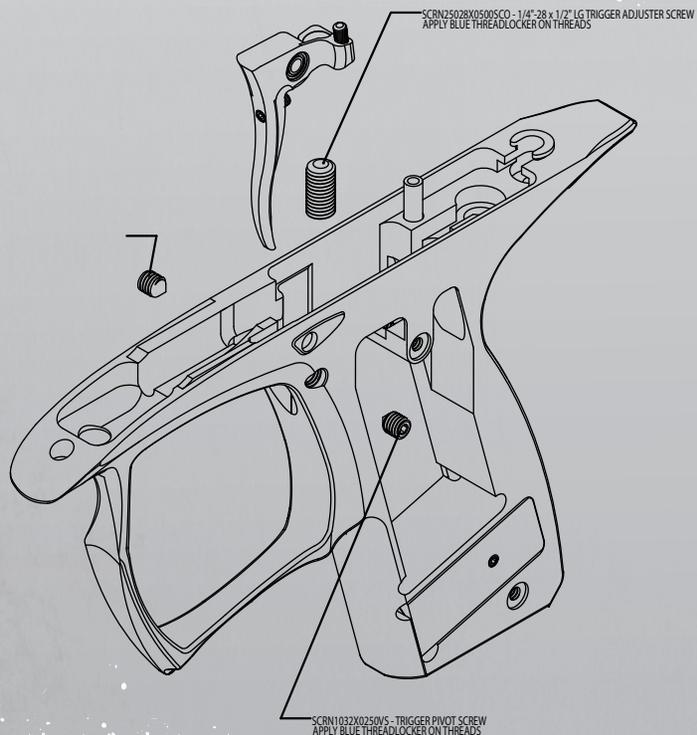


25 PARTS DIAGRAMS

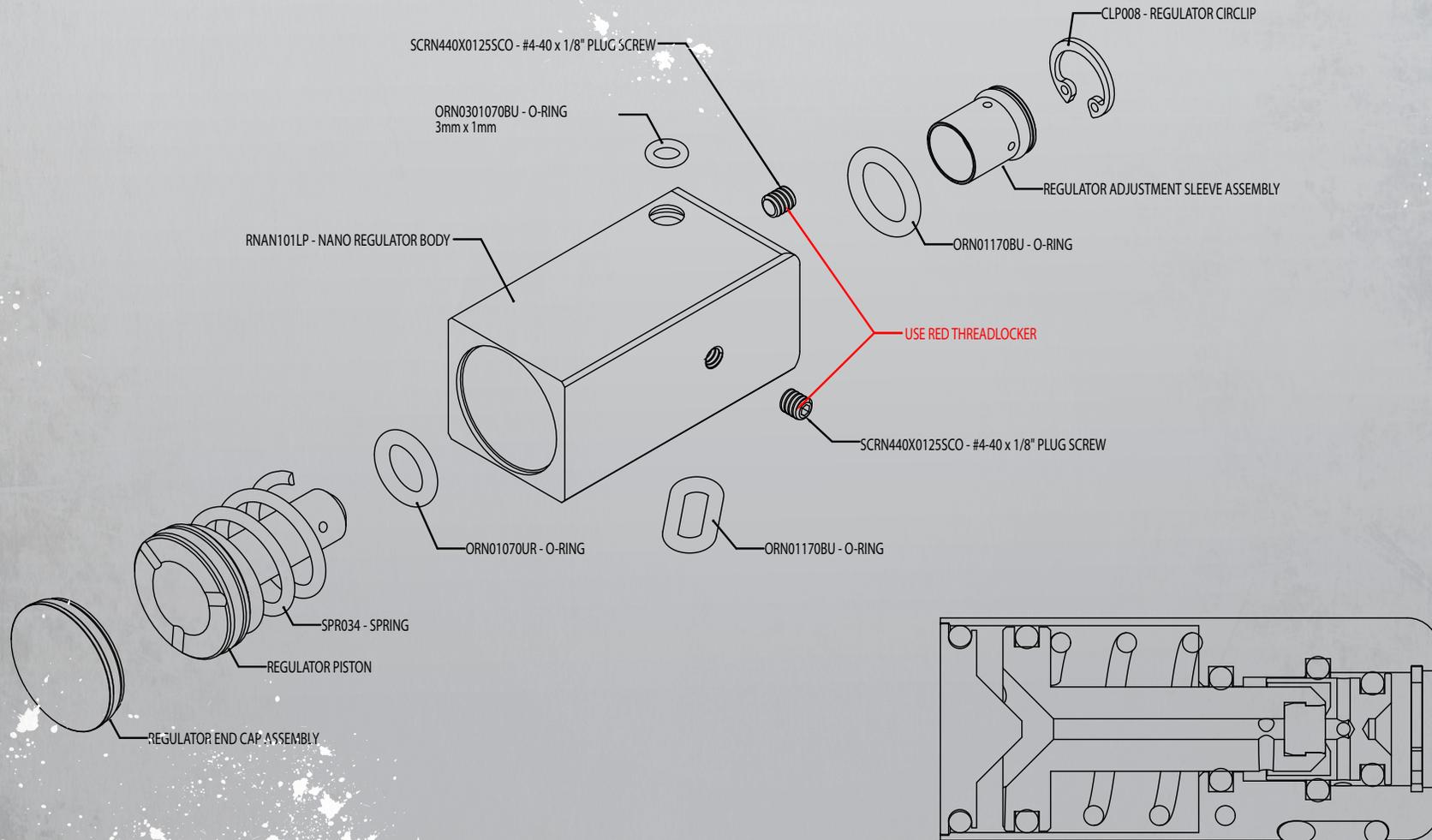


26 PARTS DIAGRAMS

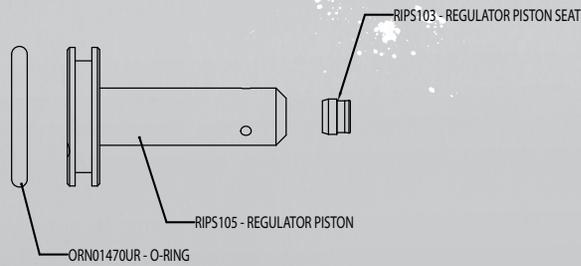
SCRN1032X0250VS - TRIGGER PIVOT SCREW
APPLY BLUE THREADLOCKER ON THREADS



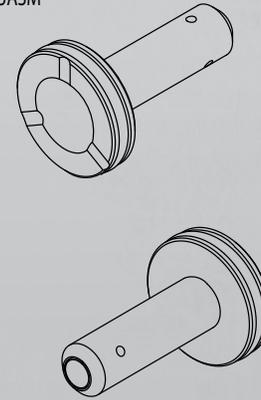
27 PARTS DIAGRAMS



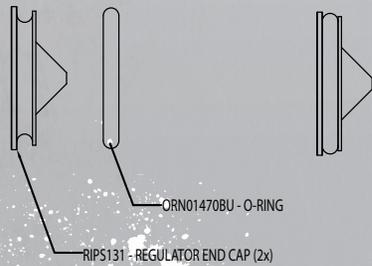
28 PARTS DIAGRAMS



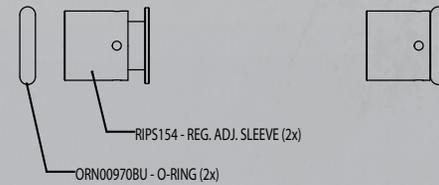
GI-NANO REGULATOR PISTON ASSEMBLY
RIPS105ASM



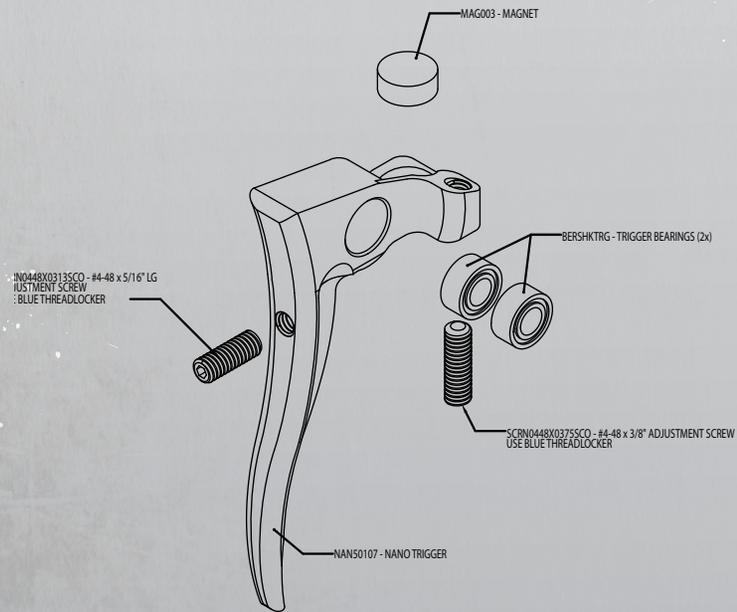
REGULATOR END CAP ASSEMBLY
RIPS131ASM



REGULATOR ADJUSTMENT SLEEVE ASSEMBLY
RIPS104ASM

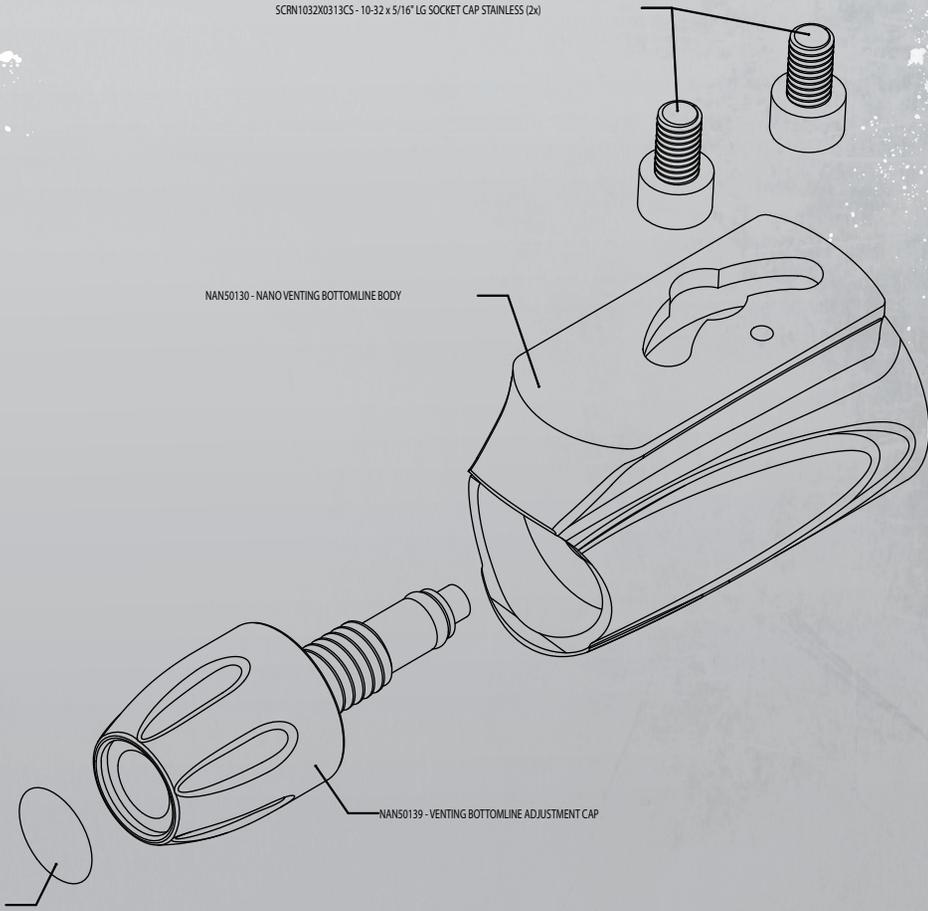


29 PARTS DIAGRAMS



SCRN1032X0313CS - 10-32 x 5/16" LG SOCKET CAP STAINLESS (2x)

NAN50130 - NANO VENTING BOTTOMLINE BODY



30 | 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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