

Indian Creek
d e s i g n



FREESTYLE FS-8

Operation Manual

Version 1.4

Indian Creek Design, Inc. 1019 First Street North Nampa, ID 83687
(208) 468-0446 phone (208) 468-6650 fax www.icdpaintball.com



RULES FOR SAFE MARKER HANDLING

1. Treat every marker as if it were loaded.
2. Never look down the barrel of a paintball marker.
3. Keep your finger off the trigger until ready to shoot.
4. Never point the marker at anything you don't wish to shoot.
5. Keep the marker on safe until ready to shoot.
6. Keep the barrel blocking device in/on the marker's muzzle when not shooting.
7. Always remove paintballs and propellant source before disassembly.
8. After removing propellant source, point marker in safe direction and discharge until marker is degassed.
9. Store the marker unloaded and de-gassed in a secure place.
10. Follow warnings listed on propellant source for handling and storage.
11. Do not shoot at fragile objects such as windows.
12. Every person within range must wear eye, face, and ear protection designed specifically to stop paintballs and meeting ASTM standard F1776.
13. Always measure your marker's velocity before playing paintball and never shoot at velocities in excess of 91.44 meters (300 feet) per second.





INSTRUCTION MANUAL

Version 1.4

Indian Creek Design, Inc.

Model 2006 FS-8

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WARNING:

This is not a toy. Misuse may cause serious injury or death. Eye protection designed specifically for paintball use must be worn by the user and any person within range. Recommend 18 years of age or older to purchase. Persons under 18 years of age must have adult supervision. Obey all local, state and federal laws. Follow the rules of safe paintball marker handling. READ OWNER'S MANUAL BEFORE USING.





INDIAN CREEK DESIGN, INC. LIMITED WARRANTY

Indian Creek Design, Inc., warrants the replacement of any original part due to defect in materials and/or workmanship of this marker. This warranty will be in effect for twelve (12) months for parts and twelve (12) months for labor following the original date of purchase for the original purchaser. Such warranty service will be provided only if the warranty registration card included with this manual is filled in completely and on file at Indian Creek Design, Inc. All other service will be duly charged for and returned via UPS C.O.D.

Indian Creek Design, Inc., will replace without charge any original part that is determined by Indian Creek Design, Inc., to be defective under the terms of this warranty. However, shipping charges are not covered hereunder. Failure due to an accident, abuse, neglect, modification, normal wear, operator error, maintenance by other than an authorized Indian Creek Design, Inc., dealer, or use of parts inconsistent with the use originally intended for the marker as sold, is not covered by this warranty.

There are no other warranties or guarantees, expressed or implied, made by Indian Creek Design, Inc., on this marker. The sole and

exclusive liability of Indian Creek Design, Inc., and/or its authorized dealers, affiliates, or agents pursuant to this warranty will be for repair or replacement of the defective part; incidental or consequential damages are expressly excluded hereunder.

Indian Creek Design, Inc., its authorized dealers, affiliates, or agents, will not be liable under this warranty, nor under any state or federal law, or the common law or otherwise for any damage or failure, including personal injury, resulting from such use and/or alteration. This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state.

For warranty parts, service or information contact:

Indian Creek Design, Inc.
1019 First Street North
Nampa, Idaho 83687
(208) 468-0446





FS-8 OVERVIEW

The FS-8 is a quality marking instrument specially designed to meet the needs of the professional style tournament player. The FS-8 is an electronic solenoid actuated computer controlled marker. The major components of the FS-8 are machined from solid, aircraft-grade aluminum, and then hard anodized per military specifications. No castings are used in the construction of the FS-8, thereby providing the end user with a high-quality, precision-engineered marker.

Paintball markers get a lot of abuse. Indian Creek Design, Inc., has built the FS-8 with this in mind. All internal parts, wear and contact surfaces have been hard anodized. The toughest and most resilient materials and components have been used in the design of this product.

The FS-8 uses a single standard 9-volt battery for operation. The circuitry is a microprocessor based digital controller.

The FS-8 operates on low-pressure. The main operating pressure is 220-260 PSI nominally adjusted to visually via the gauge on the primary (input) regulator. The secondary pressure is factory preset and regulated to 120-145 PSI. Gas usage is controlled through



these 2 internal regulators. A unique feature of this marker is the regulator adjustment. This allows precise adjustment for the velocity control of the marker and for optimal gas efficiency.

The FS-8 comes with a removable barrel system. This feature allows the user to select a barrel that is most suitable for the playing conditions. All barrels are honed with straight and spiral tip porting and stock length is 11".

OPERATION

Read the entire manual before you prepare your FS-8 for play. Safety and safe marker handling are the most important aspects of paintball sports. Please practice each of the following steps with an unloaded marker before attempting to charge your marker with compressed air and paintballs. Do not load compressed air and paintballs into your FS-8 until you feel completely confident with your ability to handle your FS-8 safely.

Keep your finger out of the trigger guard and away from the trigger; point the muzzle of the marker in a safe direction at all times. Keep the marker turned off until ready to operate. The FS-8 uses an on-off switch for one of its safety devices. Always keep your FS-8 pointed in a safe direction. Always use a barrel plug or barrel





blocking device. Remember that the ultimate safety device is you, the operator.

Installing the 9 volt Power Source

The FS-8 requires a single 9-volt battery as the electronic power source. The use of long life batteries is recommended.

The 9-volt battery is located in the grip behind the trigger. The battery is accessed through the grip panel located on the right grip located on the right side of the marker.

Remove the 2 screws that hold the grip panel in place. Connect the battery to the terminal and place the battery inside the frame carefully being sure that the black and red wires to the terminal are toward the top. Make sure that there are no abrupt kinks and the wires are comfortably placed, do not force them into place. Replace the grip panel and 2 screws.

Compressed Air usage

The FS-8 comes with a female 1/4" Push-In fitting adapter on the input of the regulator. The FS-8 can be set up to use a nitrogen or compressed air system. Although it may be used, CO2 is not

recommended for use as the propellant. Generally the CO2 that we use as an industry is industrial grade CO2. It is dirty, pumped from large tanks full of contaminants including dirt, rust and metal flakes. CO2 can be used most successfully if used with anti-siphon systems and filters. Be aware that under the conditions of CO2 the results may not be as expected. Consult the place where you purchased your FS-8, or a recognized and competent airsmith, for instruction in the safe handling of compressed-air cylinders before purchasing or connecting one to your FS-8.

Adjustable regulator compressed air systems:

The input pressure from your compressed air system should be regulated down to 450-800 PSI output pressure. Use a VERY HIGH FLOW low pressure output tank and regulator set-up for your best results. The FS-8 will work just fine with a pre-set regulated tank or an adjustable output regulated tank. Note: on MOST systems, there is a large difference between the setting pressure and the actual output operating pressure. If your compressed air system does not have an output pressure gauge on its regulator we do not recommend its use.





Fixed output regulated compressed air systems:

The FS-8 will work just fine with a pre-set tank. However, you will get much better performance from a HIGH FLOW low output pressure tank/regulator than with a high pressure (750-850) output. **VERIFY** the output pressure from the regulator. If your compressed air system does not have an output pressure gauge on its regulator we do not recommend its use.

CO2 usage:

Although it may be used, CO2 is not recommended for use as the propellant. Generally the CO2 that we use as an industry is industrial grade CO2. It is dirty, pumped from large tanks full of contaminants including rust and metal flakes. CO2 can be used most successfully if used with anti-siphon systems and filters. Be aware that the use of CO2 may result in less than optimal performance. CO2 use is NOT covered under warranty.

REMEMBER: CO2, compressed air or nitrogen systems can be extremely dangerous if misused or improperly handled. Use only cylinders meeting D.O.T. specifications. Do not perform any work to your tank



or tank regulator. NEVER disassemble your tank or tank regulator. Only a qualified and trained technician should perform work to your tank and tank regulator.

Before pressurizing your FS-8, check to make sure that you and anyone within range are wearing eye protection designed specifically for paintball. Be sure you have a barrel plug, sock, or barrel-blocking device in place and there are no paintballs in the marker. The on-off switch should be OFF. Air can now be applied, the marker will become pressurized and the bolt will slide backwards.

Paintball and Loader Usage

The FS-8 comes equipped to accept 1.03" OD standard-gravity feed loaders. Fit the loader directly into the vertical feed tube. Always twist it down in a CLOCKWISE direction. Always twist it off in a CLOCKWISE direction as well. The FS-8 uses .68 caliber, water-soluble paintballs. The paintballs are gravity fed from the loader through the direct vertical feed nipple and into the breech of the marker.





Modes - Rate of Fire

The 2005 FS-8 features Predator LTD Programming available through TAG Sportz. This feature is a limited version of the Predator series of programs. For more information on the programming capabilities of the full software version, or other products offered by TAG Sportz, please visit their website at www.tagsportz.com.

Register	Default	Best	Description
1	1	1	Firing Mode: 1. Semi-Auto 2. Full Auto 3. Fast Ramping (Shots are added as soon as you reach the settings in register 5 and 6) 4. PSP 2 (3 shots and then super-fast ramping) 5. NXL (3 shots, then full-auto)
2	20	20	Rate of Fire: This is the global rate of fire. This controls the MROF whether the eyes are on or off.
3	15	8	Debounce: A higher setting will keep the marker from firing extra shots with each trigger pull.
4	10	10	Dwell: Bolt forward duration. This is the length of time the bolt stays forward.

To enter program mode the tournament lock (if available on your board) must be off. Turn the marker on with the trigger pulled. The next set of pulls takes you to a register. Example: turn marker on with trigger pulled and wait 2 seconds. Pull trigger 2 times to go into rate of fire register.

The board will now tell you what the current rate of fire is by flashing the current setting. After this you can enter the new setting. Once this is done the board will flash 2 times to let you know it took the new setting.

1. Turn gun on with trigger pulled.
2. Gun will flash to let you know you are in program mode. This indication usually takes about 2 seconds.
3. Pull the trigger to go to a register.
4. Gun will flash current settings for that register.
5. Enter the new setting by pulling the trigger. Example: if you want a ROF of 20, pull the trigger 20 times once you are in register 2.
6. The board will flash 2 times to let you know it took the new setting.
7. You are now back in the register column.
8. Pull the trigger to go to the next register. Example: if you wish to go to register 8, pull the trigger 8 times.





To override the PDS for dry-firing, turn the marker on and hold the trigger in for 2 seconds until the LED starts flashing. You may now dry-fire. The LED will continue to flash during the time the PDS is off. To turn the PDS back on, hold in the trigger for another 2 seconds. The LED will stop flashing. The PDS is now activated.

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Firing the FS-8

Keep your finger out of the trigger guard and away from the trigger; point the muzzle of your marker in a safe direction at all times during this process. Be sure your goggles are securely in place. Push the on-off toggle switch into the off position.

Always keep your FS-8 pointed in a safe direction!

1. Place the empty loader onto the marker. Be sure that it is securely mounted in place.
2. Apply the compressed gas, pressurizing the marker.
3. Put the paintballs into the loader.

4. Remove the barrel plug, sock or barrel blocking device.
5. Aim the marker at the target.
6. Push the on-off switch to the ON position, the LED will light up.
7. Place your finger on the trigger.
8. Pull the trigger with a smooth squeezing motion. BANG. . .

UNLOADING THE FS-8

Keep your finger out of the trigger guard and away from the trigger; point the muzzle of your marker in a safe direction during this entire process.

Always keep your FS-8 pointed in a safe direction!

1. Push the on-off switch to the off position. The LED will be off.
2. Place the barrel plug, sock or barrel blocking device into the end of the barrel.
3. Remove the pressurized gas from the marker carefully.
4. Tilt the marker so that the loader is lower than the body of the marker.
5. Remove the paintball loader from the direct vertical-feed tube, turning the loader in a clockwise direction.
6. Inspect the inside of the direct vertical-feed tube to be sure that





a ball does not remain inside the breech.

7. Remove the barrel and make sure there is no ball in the barrel and double-check the breech area for the presence of a paintball.
8. Remove and discard any paintballs that are found in the barrel or breech.

MAINTENANCE

CAUTION: Before attempting to perform any maintenance operations or any marker disassembly, make sure that all paintballs and propellant sources have been removed from the marker. Install a barrel blocking device, push the on-off switch to the OFF position and keep the marker in this “SAFE” mode.

Simple Maintenance

Keep your FS-8 clean and lubricated to eliminate the friction that would prevent reliable operation. Clean and lube the marker before each use, and do not put it away dirty. **DO NOT USE PETROLEUM-BASED PRODUCTS!** SuperLube with PTFE (www.super-lube.com) is the recommended lubricant for the cylinder assembly. Other lubricants may be used for the cylinder as long as they are silicone or teflon based. Lithium grease is not recommended for the cylinder assembly. Lithium grease such as Dow

33 is recommended for lubricating the regulators. Be sure it is Lithium Grease and not axle grease.

Cleaning Paint from the Barrel

Unscrew the barrel to remove the barrel for swabbing/cleaning. Keep the barrel clean to insure the continued accuracy of the FS-8. Gelatin from the paintballs has a tendency to build up in the barrel. As part of your cleaning ritual, wash out the barrel with hot soapy water and rinse it well.

PDS (paintball detection system)

The PDS (paintball detection system) is designed to detect whether or not a paintball is seated in the breach ready to fire. If a paintball is not there, it will not cycle. To over-ride the PDS for dry-firing, turn the marker on and hold the trigger in for 2 seconds until the LED starts flashing. You may now dry-fire. The LED will continue to flash during the time the PDS is off. To turn the PDS back on, hold in the trigger for another 2 seconds. The LED will stop flashing. The PDS is now activated.





Removing the Bolt/Cylinder Assembly (Field Stripping)

1. Remove the paintballs and pressurized gas from the marker.
The FS-8 may not be field-stripped while pressurized.
2. Unscrew the 10-32 SHCS from the back of the marker. Pull the bolt/cylinder assembly out the back of the main body.
3. Once the bolt assembly is removed, it is possible to clean the entire upper receiver of the marker, including the breech and feed tube area. You may slightly lubricate the rear section of the bolt with a light synthetic spray before re-installing the bolt. Do not use petroleum/oil-based lubricants.
4. Point the barrel downward and slide the bolt/cylinder assembly in until flush with the rear of the marker and the screw hole lines up in the back. Re-insert the 10-32 SHCS.

STORAGE AND TRANSPORTATION

1. Your FS-8 must be clear of all paint and propellant when not being used.
2. Be sure the on-off switch is off and the LED is not lighted.
3. Put the barrel blocking device in its place.
4. Make sure the marker is clean.
5. Store your FS-8 in a clean, cool, dry place.
6. Keep your FS-8 away from unauthorized users.

This is not a toy. Misuse may cause serious injury or death. Eye Protection designed specifically for paintball must be worn by the user and persons within range. Recommend 18 years of age or older to purchase. Persons under 18 years of age must have adult supervision.

Your FS-8 must be clear of all paint and any source of propellant during transportation to and from the playing field. Keep your barrel blocking device in place. Keep the on-off switch in the off position. Protect your FS-8 from excessive heat during transportation. Observe and obey all local, state and federal laws concerning the transportation of paintball markers. For information concerning any of the laws in your area, contact your nearby law enforcement agency.





IMPORTANT: Never carry your FS-8 uncased when not on a playing field. The non-playing public and law enforcement personnel may not be able to distinguish between a paintball marker and firearm. For your own safety and to protect the image of the sport, always carry your FS-8 in a suitable marker case or in the box in which it was shipped.

If you must ship your FS-8 for any reason, the box in which you purchased the marker is acceptable to all major carriers. Never ship charged CO2 or pressurized gas cylinders.

ADJUSTING THE TRIGGER PULL

You will notice three (3) screws in your trigger. These screws adjust the length of pull, actuation point and spring tension of the trigger. The bottom screw adjusts your trigger stop point (length of pull). The middle screw is the contact point for your micro switch or actuation point. The top screw is the spring tension adjustment screw.

1. Use blue loctite while adjusting the screws. Normal activity can cause the screws to back out of adjustment. DO NOT glob the loctite on, it can cause damage to the micro switch if you use too much.

2. Begin by adjusting the bottom screw to your desired pull. Screw it in to lessen the distance the trigger must travel.

3. Very *carefully* screw in the middle screw. Making large adjustments can force the screw into the micro switch and damage it. You will want to screw it in to the point where it makes contact with the micro switch but does not permanently rest on it. Continually check to verify that the LED flashes off and then back on when you pull the trigger. If you pull the trigger and the LED goes off and stays off, you have adjusted the screw in too far. Back it out.

4. Adjust the spring tension by turning the top screw in for more tension and out for less tension.

5. Clean up any excess loctite and let it dry for at least an hour before using your FS-8. This ensures the screws will remain in place.

FS-8 TUNING GUIDE

Main Input pressure regulator Adjustment:

The FS-8 operates on a proven and innovative system. Take the time to understand this section. The pressurized gas is regulated internally. The high-pressure air is used to propel the paintball. The low-pressure air is used to operate the 3-way solenoid valve





located in the rear of the marker. The high-pressure regulator is externally adjustable via the screw on the bottom of the high-pressure regulator (inline regulator). A 5/32 allen key for this screw has been provided to adjust this screw. To increase the pressure, turn the screw clockwise.

NOTE: Only slight turns are needed to accomplish changes in the pressure used to shoot the paintball.

To decrease the pressure shown on the gauge, turn the screw counter-clockwise. You must take a clearing shot before the change in the decreasing direction can be registered.

A pressure gauge has been installed into the regulator mount to indicate the exact operating pressure of the marker. This gauge is extremely useful. At the factory we set the regulator gauge to 220-260 PSI with an input pressure of 500 PSI using Compressed air as the base propellant. Under normal circumstances these settings will produce paintball velocities at approximately 280-300 fps. The input pressure from your tank should be set at 450-800 PSI. Higher input pressures will not provide increased performance.

Low pressure regulator adjustment:

The low-pressure regulator is externally adjustable via the adjustment screw in the front of the low-pressure regulator. The low-pressure regulator is pre-set at the factory to 125-140 PSI to operate the 3-way solenoid actuated valve located in the marker. It may be necessary to re-adjust the low-pressure regulator from time to time to achieve desired velocities. Bench adjusting the regulator can be done by pressurizing the marker and making sure the input regulator is set properly. Then screw in the LP regulator until the bolt cocks back. After the bolt snaps clear of the breech, screw the LP adjustment screw in an additional 1/8 of a turn. That will approximate the pressure to about 130 PSI. Verify that the bolt cycles smoothly. An over-pressurized LP regulator will cause the marker to operate at higher pressures and will greatly reduce the marker's efficiency. If there is a slight leak coming from the grip of the marker, this is an additional cue that the LP regulator is over-pressurized. The low-pressure regulator is designed to shut down and preserve the integrity of the low pressure system if it sees an input pressure over approximately 500 PSI coming from the main input regulator.

Refer to the Diagrams at the back of this manual for further instructions on adjusting the regulators and fine-tuning for velocity.





TROUBLE SHOOTING GUIDE

This marker was designed with safety and safety standards in mind. If you attempt to shoot paintballs higher than established safety standards, the marker may not function properly.

NOTE 1. If you attempt to operate the marker at extremely high velocities, the internals will not function properly!

NOTE 2. This gun is not designed to shoot above the safety limits established by industry standards but under certain conditions it may. It is therefore important to check the velocity each time before playing with your FS-8.

NOTE 3. Higher pressures DO NOT equate into better performance and higher velocities. High pressures in this marker can cause problems, showing up in erratic velocity, extreme gas consumption, leaks, and in general a poor day of play. This marker was designed to perform at lower pressures. If you keep the gauge on the side of the marker set at 220-260 and do the rest of your adjustments with the low-pressure regulator, you will be operating the marker within the range in which it was designed to operate.

Battery Related Problems

1. LED Functions but the marker does not fire.
2. Alternately missed shots.
3. Velocity drops while firing several shots.
4. Erratic velocities/jumps of 20 fps or more.
5. Unexplainable paint breakage.
6. Slight leak from the solenoid in the back of the grip.

Change the Battery. The LED only requires 1.5 volts to function. The solenoid requires a minimum of 5 volts to operate. This means the marker may appear to be getting enough power when it is not. All batteries are NOT created equal. Performance will vary. Therefore, if you experience any erratic behavior, always change the battery first.

Leak related problems

The FS-8 has a leak down the barrel. Reason: Gas is leaking through or around the valve pin seal or O-ring area.

1. Can you hear the leak when the gas is removed? Yes? There is no leak. You hear the ocean.





2. The valve tip is marred, scratched, worn out, or dirty. Try cleaning it with rubbing alcohol. If this does not work, replace it.
3. Replace the -012 O-ring on the interior of the valve housing.
4. Replace the -020 O-rings on the outside of the cylinder assembly.
5. Replace the -017 Urethane O-Rings on the interior of the cylinder assembly.

The FS-8 has a leak around the low-pressure regulator seam.
Reason: the seal between the regulator body and regulator adaptor body is bad, or the regulator is loose.

1. Tighten the regulator to the body.
2. Replace the -017 O-ring on the low-pressure regulator body.

The FS-8 has a leak around the high-pressure regulator seam. Reason: the seal between the regulator body and ASA adaptor is bad, or the regulator is loose.

1. Tighten the regulator to the adaptor
2. Replace the urethane -015 O-ring on the high-pressure regulator body.

The FS-8 has a leak inside the grip/battery area. Reason: the 3-way valve or internal hose is leaking.

1. Check for over-pressurization from the low-pressure regulator.

2. Re-adjust the low-pressure regulator per instructions on the previous pages.
3. Tighten the 3-way valve to the manifold. Take care not to over-tighten.
4. Replace the internal hose if it has visible damage.
5. Replace the solenoid valve assembly. NOTE: NEVER DISASSEMBLE THE SOLENOID VALVE. THIS WILL PERMANENTLY DAMAGE IT BY DISRUPTING THE MAGNETIC FIELD.

Ball Breakage Problems

1. The balls in you loader can bind, messing up your trigger timing. Always use an agitated loader and verify the PDS is on.
2. If the ball detent does not move freely, the paintballs will crush against it or it may have stuck in the depressed position, allowing double feeding. Check its tension regularly and keep this area as clean as possible.
3. If the ball detent is too sloppy, the ball will not be held in the proper position. This may allow the next ball to enter the path of the bolt, subjecting it to impact cracking or shearing. Verify the tension.
4. Verify the Dwell Settings. A low dwell setting can disrupt the firing valve timing.





6. Clean all debris from the breech and barrel.
6. Always use fresh, high quality paint. NOT ALL PAINTS ARE CREATED EQUAL.

Regulator Related Problems

The gauge reads correctly when charged, but climbs in pressure after a few moments. Reason: The regulator seal has been contaminated.

1. Disassemble the regulator and clean the seal with a Q-tip and alcohol. If you need assistance in the disassembly of the regulator, please call (208) 468-0446.

The gauge reads correctly when charged, but drops in pressure after a few shots.

1. The regulator may not be adjusted correctly. Remove all pressurized gas and back out the regulator adjustment screw until it is flush with the body. Pressurize the system and adjust the pressure back up to the desired pressure.
2. Verify that the on/off valve on your bottom line adaptor is properly adjusted. If the valve is only partially open, it will restrict airflow into the regulator. Alternately, if the valve is open too far, it may also restrict airflow into the regulator.

The gauge reads correctly when charged, but drops in pressure after a few shots, and is slow to climb back to normal pressure.

1. The recovery side of the regulator is sluggish and may need cleaning and lubrication. Clean out any debris and lubricate the urethane O-ring on the outside of the delrin plunger. If you need assistance in the disassembly of the regulator, please call (208) 468-0446.
2. The regulator seal needs to be replaced if it has a deep groove in it from the regulator cup.
3. Verify that the on/off valve on your bottom line adaptor is properly adjusted. If the valve is only partially open, it will restrict airflow into the regulator. Alternately, if the valve is open too far, it may also restrict airflow into the regulator.

Replacing or removing the original regulators voids all warranties.

Velocity Problems

1. Dead or weak battery.
2. Improper regulator adjustment.
3. Excessive or inadequate lubrication in cylinder or solenoid.
4. Improper Dwell settings.
5. Improper paint to barrel match.





Component Item List

Item Number	Description	Qty
508001	MAIN BODY	1
506002	REG ADAPTER	1
508003	EYE COVER L AND R	1
505004	BALL DETENT	2
508005R	GRIP FRAME RIGHT SIDE	1
508005L	GRIP FRAME LEFT SIDE	1
506006	AIR FLOW TUBE	1
506007	REAR MANIFOLD BODY	1
508008	FEED NECK	1
508009	FEED CLAMP	1
505010	BARREL	1
505011	LP REG BODY	1
505012	LP REG ADJ.	1
505013	CUP HOUSING LPR	1
506014	CYLINDER	1
506015	PISTON	1
506017	VALVE HOUSING	1

Component Item List

Item Number	Description	Qty
508016	VALVE PIN	1
508018	SLIDER	1
508021	CYLINDER BACK BODY	2
505021	REG CUP	1
505025	HIGH PRESSURE REG BODY	1
505026	HIGH PRESSURE REG BOTTOM	1
505027	HIGH PRESSURE REG TOP	2
505028	REG SPRING SPACER	2
505029	LP REG SPACER	1
506030	REG PISTON	1
505032	DROP ON-OFF KNOB	1
505033	DROP RAIL	1
505034	DROP BODY	1



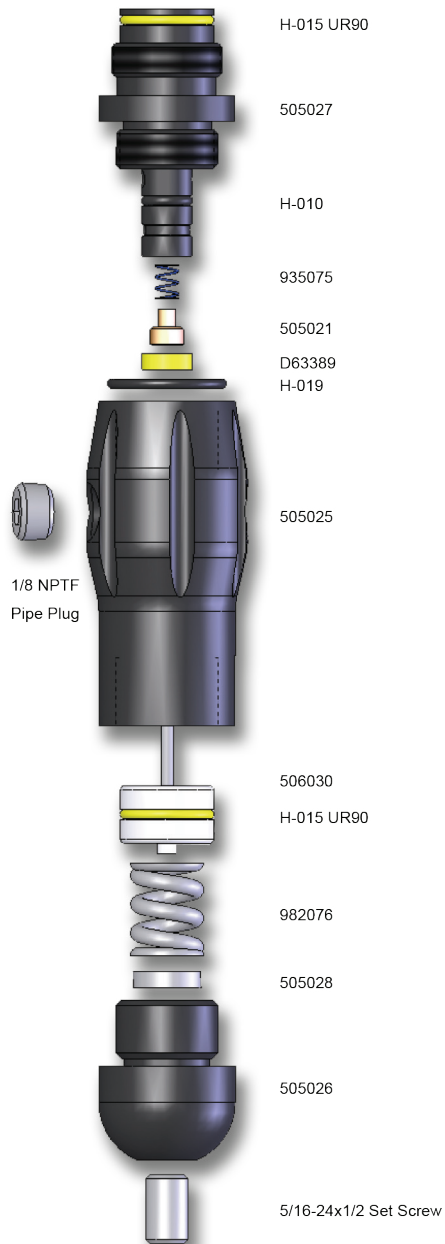


Maintenance and Troubleshooting Diagrams/Schematics

This section is provided for reference only. Operator error is NOT covered under warranty. Failure to properly maintain and/or assemble the marker is NOT covered under warranty. If you feel you are not qualified to perform maintenance work on the FreeStyle Marker, DO NOT DISASSEMBLE THE MARKER. If you have any questions about the operation or maintenance of the marker, please call (208) 468-0446 before attempting any work yourself. Our technicians are available to assist you Monday through Friday, 8-5 MST.



High Pressure Regulator



Unscrew the high pressure regulator from the regulator mount. very carefully unscrew the high pressure regulator top from the regulator main body. Do not lose the small pieces. Pop the regulator seal out of the regulator body and clean with rubbing alcohol. If there is a deep groove in it from the regulator cup, flip the seal and use the other side. Inspect the H-010 o-ring for any cuts or scratches and replace if necessary. Unscrew the regulator adjustment cap from the bottom of the regulator body. Pop the plunger out from the top, or use needle-nose pliers to grab it from the bottom. Inspect the H-015 UR90 o-ring and lubricate it with clear or white lithium grease. Clean any debris from the inside of the regulator and reassemble.

Firing Valve

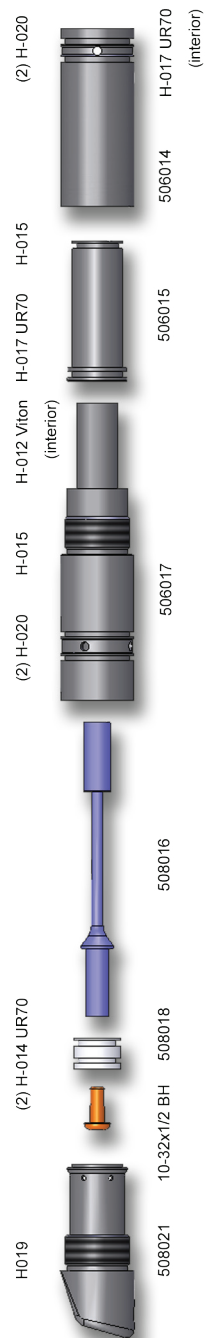
Removing the Bolt/Cylinder Assembly (Field Stripping)

The FS-8 may not be field-stripped while pressurized.

1. Remove the paintballs and pressurized gas from the marker.
2. Unscrew the 10-32 SHCS from the back of the marker. Pull the bolt/cylinder assembly out the back of the main body. The best method is to insert the allen key into the screw hole and twist the cylinder while pulling backward.
3. Once the bolt assembly is removed, it is possible to clean the entire upper receiver of the marker, including the breech and feed tube area.
4. Point the barrel downward and slide the bolt/cylinder assembly in until flush with the rear of the marker and the screw hole lines up in the back. Re-insert the 10-32 SHCS.



Firing Valve



Disassembly of the Cylinder

1. Unscrew the cylinder 506014 from the valve housing 506017.
2. The piston 506015 can now be removed from the cylinder 506014.
3. Unscrew the valve housing 506017 from the cylinder back body 508021.
4. The slider assembly (508016, 508018, and 10-32x1/2 BH) can now be removed from the valve housing 506017.

Maintenance of the Cylinder

1. It is recommended that you use SuperLube® with syncolon® (PTFE) for lubricating the cylinder.
2. SuperLube® can be purchased at most hardware stores or online at www.super-lube.com. SuperLube® and Syncolon® are trademarks of Synco Chemical Corporation.
3. Clean each component and use only a light coating of lubrication. Excessive lubrication can cause the o-rings to swell, resulting in poor performance.

Re-Assembling the Cylinder

1. Place the slider assembly (508016, 508018, and 10-32x1/2 BH) into the valve housing 506017.
2. Push the valve tip portion of the slider assembly through the valve housing to align the tip with the H-012 o-ring.
3. Push the piston 506015 all the way into the cylinder 506014.
4. Screw the cylinder assembly onto the valve housing 506017.
5. Screw the cylinder back body 508021 onto the back end of the valve housing 506017.
6. Slide the inline cylinder back into the main body with a twisting motion. This prevents o-ring stiction or shearing.
7. Align the 10-32 screw hole on the inline cylinder body with the hole in the main body.
8. Re-insert the 10-32 SHCS and screw in until snug.

Firing Valve

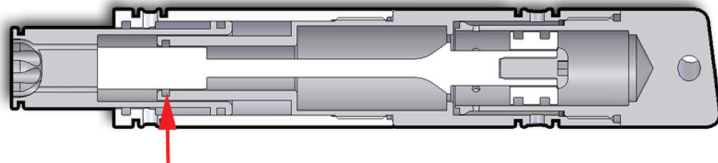


Firing Valve

Leak Through the Center of the Bolt:

To verify where a leak down the barrel is coming from, place your finger over the center of the bolt. If you can feel air, it is a leak from the center of the bolt.

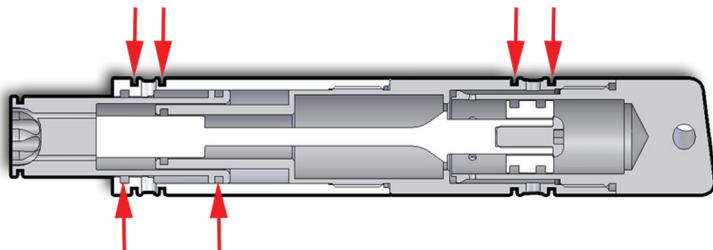
The primary causes for a leak down the center of the bolt are the H-012 o-ring or scratches/dings in the valve tip.



Leak Around the Outside of the Bolt:

A leak around the outside of the bolt is most likely the o-rings on the outside of the inline cylinder or the internal o-rings on the piston or cylinder body.

Outside o-rings are size H-020.
Inside O-rings are size H-017 UR70.



Adjusting the Trigger

1. Use blue loctite while adjusting the screws. Normal activity can cause the screws to back out of adjustment. DO NOT glob the loctite on, it can cause damage to the microswitch.



2. Adjust the pivot pin to your desired angle. To do this, remove the right clamshell and place the pin in the desired slot. Be careful not to lose the trigger spring while adjusting the pin.

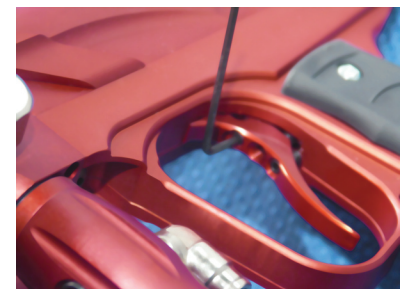
3. Adjust the bottom screw to your desired pull.



4. Very carefully screw in the middle screw. Making large adjustments can force the screw into the microswitch and damage it. If you pull the trigger and the LED goes off and stays off, you have adjusted the screw too far. Back it out. Alternately, if the LED does not blink at all when firing, the screw is not contacting the micro-switch and it needs to be screwed in (clock-wise) until it makes contact.

5. Adjust the spring tension.

6. Clean up any excess loctite and let the screws dry for at least an hour before using the FS-8.



Installing the Battery



The FS-8 requires a single 9-volt battery as the electronic power source. The use of long life batteries is recommended.

1. The 9-volt battery is located in the grip behind the trigger. The battery is accessed through the grip panel located on the right clamshell. Orient the barrel to the right to access the right side of the marker.

2. Remove the 2 screws that hold the grip panel in place.

3. Connect the battery to the terminal and place the battery inside the frame carefully. Make sure that the black and red wires to the terminal are toward the top.

4. Make sure that there are no abrupt kinks and the wires are comfortably placed. Do not force them into place.

5. Replace the grip panel and 2 screws.



Bench Adjusting:

1. This process is recommended each time you air up the marker after it has sat for awhile or a new tank is being used.

2. Screw in the HP regulator adjustment screw until it reads about 150 PSI.

3. Slowly screw in the LP adjustment screw until the bolt cocks back.

4. Now continue to screw in the HP adjustment screw until the gauge reads 220-260 PSI. You will see the bolt creep back into the breech.

5. Slowly adjust the LP regulator in until the bolt snaps clear of the breech. Then screw in an extra 1/8 of a turn.

6. Fine tune the regulator settings for velocity adjustment.

Regulator Adjustments



Velocity Adjustment:

1. After bench adjusting the regulators, chronograph the marker.

2. If the velocity is too low, make small adjustments by turning up the HP regulator.

3. If the velocity is too high, make small adjustments by unscrewing the HP regulator adjustment screw. Shoot to clear.

A Note About DWELL:

1. The recommended range for the dwell setting is 10-12. If the dwell setting is too low or too high, the marker will not chronograph or shoot properly.

2. The dwell setting is not intended to be the primary means of adjusting the velocity. Always adjust velocity by adjusting the regulators.

Clamshell Disassembly



1. Orient the barrel to the right.
Remove the right grip panel.

2. Loosen the (2) 10-32 BH screws that secure the clamshell to the main body.

3. Remove the (4) 6-32x1/4 SHCS that hold the right clamshell to the left clamshell.

4. Be cautious not to lose the trigger spring or pin.

5. When re-installing the clamshell, make sure not to pinch or cut any wires.



Eye Cover Maintenance

1. Remove the 4-40x1/4 SHCS from the eye cover.

2. Carefully lift the eye cover from the main body.

3. Clean any paint or debris from the eye cover recess. You may lift out the ball detents and eyes in order to clean the area.

4. Inspect the surface of the ball detent for any wear. If it has a flattened tip, replace the ball detent.

5. Re-install the eyes and ball detents.

6. Screw the eye cover back into place, making sure not to pinch or cut any wires.

7. Repeat on other side.

