TETRA™ ELECTRONIC GRIP MARKER

OWNER'S MANUAL

Contains:

- Safety Information
- Warranty Information
- Operating Instructions
- Annotated Diagram
- Trouble Shooting Guide

⚠ This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

⚠ **WARNING:** THIS IS NOT A TOY. MISUSE MAY CAUSE SERIOUS INJURY OR DEATH. EYE PROTECTION DESIGNED FOR PAINTBALL USE MUST BE WORN BY THE USER AND ANY PERSON WITHIN RANGE. RECOMMEND AT LEAST 18 YEARS OLD TO PURCHASE, 14 YEARS OLD TO USE WITH ADULT SUPERVISION, OR 10 YEARS OLD TO USE ON PAINTBALL FIELDS MEETING ASTM-STANDARD F1777-02. READ OPERATION MANUAL BEFORE USING.

⚠ **WARNING:** NEVER SHOOT AT ANYONE WITHOUT PROPER PROTECTIVE EQUIPMENT FOR EYES, EARS, THROAT AND HEAD, WHICH MUST BE WORN AT ALL TIMES. EYE PROTECTION MUST BE DESIGNED SPECIFICALLY FOR PAINTBALL USE. FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS MAY RESULT IN BODILY INJURY INCLUDING BLINDNESS AND DEAFNESS.

Welcome to the JT team and thank you for purchasing this high quality JT Tetra™ electronic grip marker.

We at JT stand committed to providing you with the best products and service available. Your new marker is designed and manufactured to provide ease of maintenance with trouble free performance. We ask that you read this manual to obtain the maximum enjoyment of your purchase.

Call 1-800-587-2246 or visit our web site at www.jtusa.com if you should need an Illustrated Parts List and Troubleshooting guides.

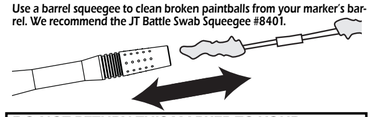
JT USA LLC.
515 Main Street, Chula Vista, CA 91911 U.S.A.
1-800-587-2246 Fax (619)205-5097
www.jtusa.com

Part No.141223-000 REV: 03/04

⚠ RULES OF SAFE PAINTBALL MARKER HANDLING

1. Always wear proper eye, face and ear protection designed especially to stop paintballs.
2. Never shoot a person who is not wearing proper protection.
3. Treat every paintball marker as if it were loaded.
4. Never look down the barrel of the marker.
5. Never point the paintball marker at anything you don't wish to shoot.
6. Keep the paintball marker on safe until ready to shoot.
7. Keep the barrel plug in the paintball marker's muzzle when not shooting.
8. Always remove gas source before disassembly.
9. Store the paintball marker unloaded and degassed in a locked place.
10. Follow warnings listed on gas source for handling and storage.
11. Never use anything other than .68 caliber paintballs.
12. Do not shoot fragile objects such as windows.
13. Paintballs may cause staining of some porous surfaces such as brick, stucco and wood.
14. Always measure velocity before playing paintball.
15. Never shoot at velocities in excess of 300 feet per second.
16. Never engage in vandalism.
17. Do not use marker for drive-by shooting.

Use a barrel squeegee to clean broken paintballs from your marker's barrel. We recommend the JT Battle Swab Squeegee #8401.



DO NOT RETURN THIS MARKER TO YOUR RETAILER. CALL 1-800-587-2246

NOTE: Any modifications to this product will void all warranties, whether expressed or implied.

WARRANTY INFORMATION

WARRANTY: LIMITED 90 DAY WARRANTY (ORIGINAL PURCHASE RECEIPT REQUIRED)

For 90 days from date of purchase, JT USA® will repair or replace this Tetra™ marker free of charge if defective in material or workmanship. This warranty gives you specific legal rights which may vary from state to state. Service is available from authorized JT USA® Service Centers. A list of these is available at JT's website at www.JTUSA.com or by calling JT USA at 1-800-587-2246. These Service Centers generally offer the quickest service. If you would rather return your marker to JT USA® please call customer service at 1-800-587-2246 for return authorization number and shipping address. (Authorization number must be visible on outside of shipping package to be accepted.) Do not return any product via non-traceable services such as regular mail or parcel post. Such products may become lost and JT USA® will not be responsible for replacement.

PAINTBALL MARKERS OUT-OF-WARRANTY

Authorized Service Centers will gladly repair any markers out of warranty for a nominal charge to cover parts and labor. Repairs made by Service Centers will usually be faster and less expensive than those sent back to the factory. Go to www.JTUSA.com/service for service center locations near you. Prior to shipping your out of warranty marker, you must first call customer service at 1-800-587-2246 for return authorization number and shipping address. (Authorization number must be visible on outside of shipping package to be accepted.) Any out of warranty Marker returned to JT USA® must be shipped prepaid and include the repair fee. Please call the Customer Service number for current repair fees. JT USA® will repair or replace the marker with a reconditioned unit of the same model. If payment is not included you will be billed for the repair fee plus a $4.00 invoicing fee. Upon receipt of payment , the marker or its replacement will be shipped to you. In the event that the marker includes no means of contacting the sender or no payment for the repairs is received within 60 days of billing, the ownership of the marker will be forfeited and it will be disposed of at the discretion of JT USA®.

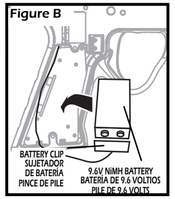
⚠ **WARNING:** Never shoot at anyone without proper protective equipment for eyes. Markers equipped with regulators can store several shots in the air system after the air source is removed. Make sure your marker is in a safe condition before disassembly and maintenance or removal of barrel plug. Follow the unloading section in this manual.

E-GRIP OPERATION

⚠ **WARNING:** All steps to be performed without having attached gas source to marker.

STEP 1. EYE PROTECTION: Make sure everyone within range (200 yards) is properly protected from paintball impacts.
STEP 2. PUT ON "SAFE". Push mechanical safety from left to right (SEE FIG. C); no red band showing. Make sure barrel plug is placed securely in muzzle of marker
STEP 3. INSTALL BATTERY: Remove grip cover and install supplied 9.6 volt NiMH battery into grip after connecting battery clip. (See Fig. B)
STEP 4. TEST: Test for power before installing grip cover.
STEP 5. TURN ON: Turn marker on by pushing the On/Off switch (See Fig. C) forward to on position. Examine display on left side of the grip for lighted display. Depress trigger watch/listen for function.
STEP 6. REPLACE GRIP COVER (Don't overtighten screws)
STEP 7. TEST FIRE: Following the operation instructions below, first test fire the marker without paint.
NOTE: Should marker develop function problems related to the grip, Replace the battery with fully charged 9.6 volt NiMH battery before any other trouble shooting measures.
NOTE: Low battery indicator is located on the grip panel display. Full charge is a battery with all bars lit. As power decreases in the battery the indicator will show less bars. Less than 2 bars will give poor performance during rapid trigger pulls. For best performance recharge your battery when less than 2 bars are shown.
NOTE: The E-GRIP is semi-automatic fire only.
STEP 8. To turn marker off push On/Off switch to rearward (See Fig. C). When the marker is off and trigger is activated the grip display will show :JT USA Safe'.

Figure B



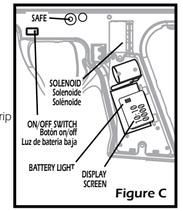


Figure C

OPERATING INSTRUCTIONS

⚠ **WARNING:** Be sure the paintball marker is always pointed in a safe direction. Read the following operating instructions and WITHOUT LOADING ANY PAINTBALLS proceed several times through the operating steps with your paintball marker (dry fire the paintball marker at a safe target) so that you will be able to operate the marker properly and safely.

STEP 1. EYE PROTECTION: Make sure everyone within range (200 yards) is properly protected from paintball impacts.

STEP 2. ENGAGE: With safety in the off position and power switch in the off position, cock marker by pulling cocking pin fully back until locked in rear position. The Tetra™ is a semi-automatic marker, which will re-cock itself after firing when working properly.

STEP 3. PUT ON "SAFE". Push safety from left to right; no red band showing. Make sure barrel plug is placed securely in barrel of marker. The safety in this marker is a cross bolt type that blocks movement of the sear. The marker cannot be cocked or fired while safety is engaged. Now push on/off switch forward to turn marker on (See Fig. C).

STEP 4. ATTACH GAS SOURCE: Marker can be used with any ASTM compliant constant air refillable cylinder or CO2 refillable cylinder (not included). A regulated HPA or compressed air cylinder is suggested for best performance of this marker (RECOMMEND JT 47 cu. in. constant air cylinder.). Most preset regulated HPA systems have an output pressure of 750-850 psi.
NOTE: Add 3 drops of mineral oil to the ASA adapter prior to attaching the refillable cylinder. Check the website at: www.jtusa.com for approved lubricants.

STEP 5. LOAD PAINTBALLS:
A) Insert loader (not included) into ball feed port. Grip loader from the top. Insert loader feed neck into ball feed port on the marker. Twist and push firmly in a clockwise direction. (RECOMMEND Viewloader Quantum™, eVLution II™, Envy™ or Revolution™ electronic loader)
NOTE: The loader to ball feed port fit is purposely tight.
B) Pour paintballs into loader. Paintballs should be stored in a cool, dry place in sealed plastic bags. Do not subject to freezing, excessive heat, humidity or store in direct sunlight. These conditions may cause ball breakage and/or poor feeding. (RECOMMEND Brass Eagle, Viewloader or JT brand .68 caliber paintballs.)
NOTE: Use a squeegee to clean inside the paintball marker's barrel.

STEP 6. Now push on/off switch to left to turn on electronic grip. Remove barrel plug and take off safe by pressing safety from right side of paintball marker until red band is showing.

STEP 7. VERIFY VELOCITY: Verify that the paintball marker's velocity is below 300 feet per second or less if required by playing field. Velocity should be measured with a chronograph prior to playing paintball. Velocity may be adjusted by turning the velocity adjustment screw. (See Fig. A) **Using a 1/8" allen key (included) turn the screw clockwise to increase velocity and counter-clockwise to decrease velocity.**

STEP 8. FIRE: Paintball marker is now ready to fire.

⚠ **WARNING:** Never shoot at anyone without proper protective equipment for eyes, which must be worn at all times. Eye protection must be designed specifically for paintball use. Failure to follow these safety precautions may result in bodily injury including blindness and deafness.

UNLOADING YOUR TETRA™

⚠ **WARNING:** Always wear proper eye, face and ear protection designed especially to stop paintballs while unloading your paintball marker.
STEP 1. Make sure barrel plug is securely in barrel.
STEP 2. Put Tetra™ on safe. (Push safety left to right)
STEP 3. Remove loader.
STEP 4. Turn marker upside down to remove paintballs from feed port.
STEP 5. Remove barrel.
STEP 6. Point marker toward ground in a safe direction and fire several times to insure it is completely unloaded. Put marker back on safe.
STEP 7. Remove gas source. Should your marker be equipped with a regulator, fire till no pressure remains in the marker.
STEP 8. Turn marker off by moving on/off switch to right.
STEP 9. Use squeegee to dislodge any paintballs from barrel and replace barrel plug.
STEP 10. Replace barrel.
Do not unload your marker indoors.

⚠ **WARNING:** Do not look down the breach or barrel of the marker while gas source is attached.

GENERAL TROUBLESHOOTING

General Maintenance

Use only JT approved parts. NOTE: The use of third party parts such as o-rings, which could be a slightly different size or hardness, can result in poor performance due to broken paint, ball hop and rapid fire. It is critical to the good performance of your marker to use only JT approved parts. Regular maintenance of your Marker is the best insurance against a problem with your marker in the field. JT USA recommends that you conduct a general maintenance of your Marker after every 1000 paintballs shot. This general maintenance will involve removal of the bolt and striker and checking the condition of o-rings. Replacing worn o-rings or lubricating dry o-rings will go a long ways to preventing a problem while playing. It is recommended that you use a lubricant that is designed specifically for paintball markers. Go to www.JTUSA.com for updates on approved marker lubricants.

Gas Leaks

Gas Leaks will occur in the marker because of dirty, dry or damaged o-rings or seals. There are 8 of these o-rings,washers and seals in your marker. The most common parts that may require maintenance are; striker o-ring and cup seal. To obtain JT USA approved parts you should purchase the JT Marker Repair Kit #0338. This kit contains all of the parts you need to properly maintain your marker.

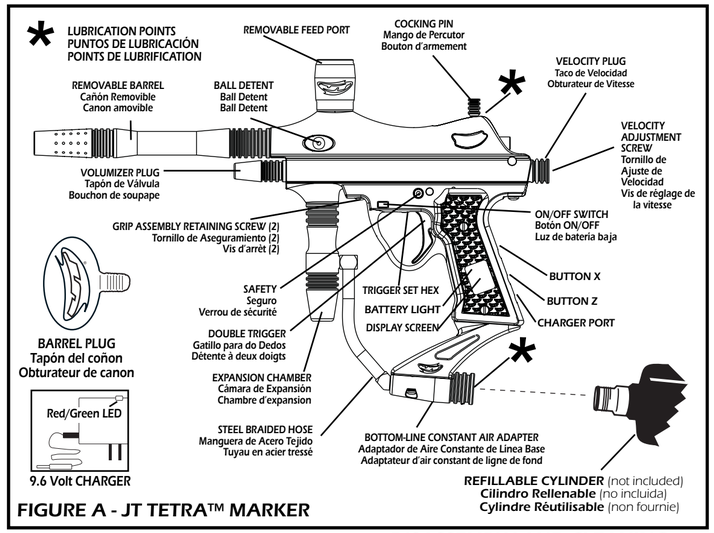


FIGURE A - JT TETRA™ MARKER

FIELD STRIP GUIDE

Bolt and Striker removal
STEP 1. EYE PROTECTION: Make sure everyone within range (200 yards) is properly protected from paintball impacts.
NOTE: After following your unloading instruction in this manual proceed with the field strip guide.
STEP 2. Remove gas supply from marker.
STEP 3. Make sure cocking pin is in the forward position. Pull trigger to release if necessary.
STEP 4. Remove top cocking pin and remove bolt (Figure D).
STEP 5. Remove Quick Pull Pin and Remove Velocity Plug, Bumper, Spring Guide and Spring (Figure E). NOTE: Use caution when removing as all parts are under spring tension.

FIELD STRIP REASSEMBLY

Follow the steps above in reverse order. Lubricate striker o-ring with light coat of mineral oil. When installing bolt make sure gas port hole is facing downward. (Figure D) Install cocking pin through the rear bolt hole into striker.(see Figure F)

Figure D

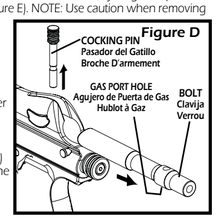
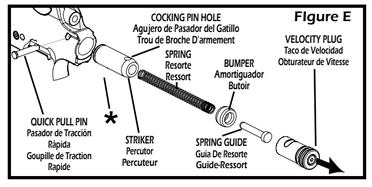


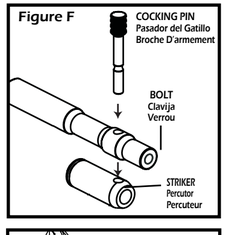
Figure E



STRIKER REMOVAL AND REPLACEMENT

STEP 1. Follow Steps 1-5 of Field Strip Guide.
STEP 2. Pull trigger and tap rear of the receiver against towel on flat surface to remove striker.
STEP 3. Grasp striker with fingers and pull from receiver.
STEP 4. Clean with soft cloth or baby wipe. Relubricate with mineral oil and replace. NOTE: Examine o-ring for any damage and replace if necessary.
STEP 5. Replace striker into receiver with sear flat down. NOTE: It is necessary to pull the trigger 3 or more times while applying pressure to striker with your finger in order to fully seat the striker. (See Figure G)
STEP 6. Reassemble per Field Strip Reassembly Section.

Figure F



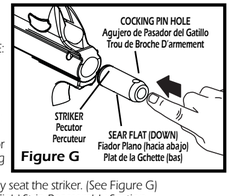


Figure G

DISASSEMBLY AND CLEANING OF BALL DETENT

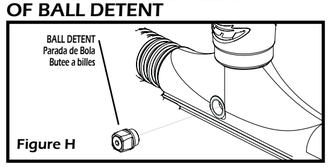


Figure H

STEP 1. Remove 1/8 hex screw or square headed ball stop assembly
STEP 2. Remove ball detent.
STEP 3. Clean with soft cloth or baby wipe.
STEP 4. Replace in reverse order. (See Figure H)
NOTE: Ball stop is adjusted for tension on the ball by screwing hex screw inward a maximum of 2 and one half turns from flush.

OMNI PRESSURE VALVE (patent pending) ADJUSTMENT

This markers valve and cup seal design is very unique. Unlike other blowback markers the valve is dwell adjustable by changing the position of the volumizer. Dwell is the time a valve remains open after being struck by the striker assembly. Previously the adjustable dwell feature has been available only on the most expensive electronic markers.

⚠ **WARNING:** Insure all individuals within 200 feet are wearing proper eye, face and head protection before discharging marker.

⚠ **WARNING:** Before any maintenance or changes to your air system, volumizer or other pressurized fittings. Insure the marker is unloaded and contains no pressure anywhere in the system. Note: The regulator acts as one way valve for high pressure. If your marker is equipped with a regulator always insure pressure has been vented by discharging the marker in a safe direction, after removing air pressure source. (Please see "Unloading Your Tetra™" in this owner manual)

HOW TO OPERATE OMNI PRESSURE VALVE:

The Tetra™ is factory set for 800 psi input pressure. Guidelines for valve/striker spring adjustments at higher and lower pressure are as follows. For low pressure operation (400-600 psi) it is best to have the volumizer unscrewed inward slightly to reduce pressure on the valve spring (See Fig. I.1) and increase dwell for more air to the paintball. For high pressure operation (600 to 1000 psi) it is best to have the volumizer screwed outward to increase pressure on the valve spring (See Fig I.2) this will decrease dwell for less air to the paintball. The most efficient dwell for any given pressure may require valve/striker spring adjustment and some testing at the chronograph for optimal performance (See STEP 7 of Operation Instructions). Any change in the velocity screw position, output pressure of a regulated system or fresh filling of Co2 cylinder will require chronograph of paintball speed to insure safe playing velocity.

TROUBLESHOOTING GUIDE

⚠ **WARNING!:** All troubleshooting and corrective actions should begin with by following the unloading procedure in this manual.

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION(S)
Gas leaks at marker/ bottle connection point	1. Gas bottle O-ring dry or defective 2. Gas bottle defective	-Remove gas bottle from marker -Lubricate O-ring -Replace O-ring -Replace Gas Bottle*
Gas leaks out barrel	Cup seal defective	-Replace cup seal
Gas leaks through Volumizer	Volumizer O-ring dry or defective	-Remove barrel -Remove volumizer -Check O-ring -Lubricate O-ring or replace
Marker does not re-cock	1. Insufficient gas to Marker 2. Striker O-ring dry or defective 3. Bolt O-rings dry or defective 4. Defect striker spring 5. Excessive gas source pressure(Omni-Pressure Valve Adjustment)	-Check functioning of gas bottle -Lubricate O-ring or replace -Lubricate O-ring or replace -Remove striker spring -Inspect and replace if appropriate -Reduce gas source pressure to below 1500psi. NOTE: There is no pressure adjustment for CO2 cylinders.
Marker does not shoot paintballs straight	1. Paintball debris in marker/barrel 2. Out-of-round (old) paintballs	-Remove & clean barrel -Clean vertical feed adapter -Clean bolt area -Replace with fresh paintballs
Bolt hangs up	Bolt hanging up on paintball debris	-Remove barrel -Remove Bolt Release Pin -Use wood dowel to release bolt -Remove bolt and clean bolt and chamber
Marker double feeds paintballs	1. Ball stop dirty or broken 2. Missing ball stop	-Remove ball stop screws/cover Replace ball stop -Remove ball stop -Clean ball stop or replace
Marker chops paintballs	1. Ball stop dirty or broken 2. Striker O-ring dirty 3. Bolt & receiving chamber dirty 4. Ball loader not working properly 5. Defective paintballs 6. Excessive gas source pressure	-Remove ball stop -Clean ball stop or replace -Remove & clean/replace dirty or worn O-ring -Remove bolt & clean -Swab marker and barrel -Clean, repair or replace ball loader Replace ball stop -Replace paintballs -Reduce gas source pressure to below 1500psi. NOTE: There is no pressure adjustment for CO2 cylinders.
Display shows **JTUSA Safe**	1. Trigger to far inward 2. X and Z buttons are depressed or hung up	-Read just trigger hex until trigger will click. -Remove right grip space X and Z microbuttons away from grip frame with electrically non conductive material ex. rubber block

To obtain JT USA approved parts you should purchase the JT Marker Repair Kit #0338. This kit contains all of the parts and instructions you need to properly maintain your marker.

Figure I.1

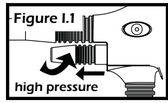
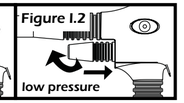


Figure I.2



The Omni Pressure valve adjustment must be matched to your air source output pressure.
Consult your air source owner's manual for output pressure of your regulated HPA cylinders. Co2 cylinders are generally not regulated and do not have predictable output pressure. If you chose to use a Co2 air source at temperatures greater than 70 degrees. It may be necessary to add a pressure regulator (not included) to your marker air system in order to achieve optimal performance from your marker.

9.6 Volt NiMH BATTERY (See Fig.A&B)

⚠ **WARNING:** Use only the supplied charger and 9.6 volt NiMH battery for your JT Tetra™ marker. Use of other chargers may damage your battery.

Should you need a replacement of battery or charger contact JTUSA at 1-800-587-2246 or go to www.JTUSA.com. Installation of the battery is covered in the E-Grip operation portion of this manual. A fully charged 9.6 volt NiMH battery will provide greater than 7000 shots. It is not necessary to completely discharge the battery before recharging. Charging time is dependent on the amount of energy remaining in the battery when placed on charge.

9.6 Volt NiMH CHARGER (See Fig.A)

⚠ **WARNING:** Do not charge this marker with air source attached. Before charging insure the marker is unloaded and safety is engaged.

The supplied charger is 110 volt wall outlet type. To charge your 9.6 Volt NiMH battery it must be installed in the marker grip. Installation of the battery is covered in the E-Grip operation portion of this manual. A charging port is located on the backside of the marker grip (See Fig. A). A battery that will accept charge (low voltage) activates the red light in the charger (See Fig. A). Charge your battery before first use. Average charge time will be 4 hours. Do not leave the marker on charge after the LED light turns green. If the LED has no LED light showing continue to charge till LED turns green.

GORILLA GRIP FEED NECK DISASSEMBLY (PATENT PENDING)

The Tetra™ is equipped with the Gorilla Grip (patent pending) removable feed neck. It is designed to fit most loader feed necks. It is easy to dissemble and clean.
NOTE: Make sure the o-ring is in the correct position before reattaching feed neck to insure it remains aligned during play. The feed neck design is purposely tight. Insertion of loader may require downward pressure and turning to fully seat the loader into feed neck. Removal may require turning and upward force on the loader.

E-GRIP ELECTRONICS OPERATION

On/off switch (See. Fig. C) is a two or three position switch. Moving the switch to the right hand position turns electronics off. Moving the switch to the left hand position turns electronics on. Moving the three position switch to the 2nd left position activates the Anti-Chop Eyes (Quadra™ marker only).

⚠ **WARNING:** Install barrel plug. Be sure the marker is always pointed in a safe direction. Read the following electronics operating instructions, without loading any paintballs, or attaching air source, proceed several times through the operating steps with your paintball marker so that you will be sure to operate the marker safely.

BATTERY CHARGE INDICATOR

(See Fig.C)
Use only the supplied 9.6 volt NiMH rechargeable battery. The display screen shows an image of 9.6 volt NiMH battery. Full charge is a battery with all bars lit. As power decreases in the battery the indicator will show less bars. Less than 2 bars will give poor performance during rapid trigger pulls. For best performance recharge your battery when less than 2 bars are shown. You can recharge your battery at anytime.

DUAL CONTROL BUTTONS

(See Fig.A)
The rear of the marker grip has two buttons and one 9.6 volt NiMH battery recharge port. The top button is X. The bottom button is Z. Button X controls time decrease functions. Button Z controls timing features and time increase functions.

SERVICE NEEDED MESSAGE:

When the service needed message appears on the display you will need to follow your **Field Strip Guide** (See that section) for regular marker maintenance. Once maintenance is complete, remove the left side grip cover and lightly depress the red micro switch button once. Pressing the red button will reset the service needed shot counter.

GAME TIMER:

(See Fig.C)
The game timer feature is designed to give you control of the game by allowing you to see time remaining with just a glance of the display screen. This timer system does not give auditory warnings. To use the game timer turn marker on and press button Z for 3 seconds. The marker will default to factory timer settings or the last settings you entered. To change pregame and game settings press the X button to adjust the time upward by 10 sec intervals. To adjust the time downward by 10 sec intervals press the Z button. If you are not in a goggles on/safe area for marker discharge then insure the safety is in the on position with no red band showing. To activate the timer pull the trigger once. Once the timer is activated it cannot be reset without turning marker off and repeating the above process.

GAME MANAGER:

(See Fig.C)
The game manager feature is designed to compliment the game timer system by showing a player time milestones critical for effective team play. The visual signal for these time milestones is a flashing display screen. To set the game manager system follow the above game timer instructions. Next press the Z button for 3 seconds to set milestone A. You have access to 4 game time milestones A-D. To adjust time milestone upward in 10 sec intervals press button X, to adjust this time downward press button Z. To move on to the next time milestone B-D press and hold button X for longer than one second. If you have set time milestones the system will activate for game play when the game timer feature is chosen. **See game timer instructions.**

TOTAL SHOTS:

(See Fig.C)
Your marker keeps count of every time the trigger switch is activated while the marker is on. You can display the total marker shots by pressing the Z button for 3 seconds, 3 times after the marker is turned on. This feature is much like a car odometer. The total shot count cannot be reset.

TRI-TOUCH TRIGGER ADJUSTMENT:

(See Fig.A)
The trigger has three hex screws for adjustment. Adjustments include over travel, trigger switch and trigger set. Two hexes are visible on the trigger. Trigger set hex is inside grip frame (See Fig. A).

⚠ WARNING: Over adjustment of hex screws may damage trigger switch or cause marker to discharge when turned on. Install barrel plug. Be sure the marker is always pointed in a safe direction. Read the following trigger set screws instructions and after any adjustments, without loading any paintballs, or attaching air source, proceed several times through the operating steps with your paintball marker so that you will be sure to operate the marker safely.