

OPERATORS MANUAL:

Typhoon - Stroker

WARNING: READ AND UNDERSTAND THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS PAINTGUN!!!

IF YOU DO NOT, you may not be happy with the results.

THIS IS NOT A TOY!!! Handle safely at all times. Always wear approved safety goggles!

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INTRODUCTION

Many years ago I discovered that most of the Paintball players were considerably more youthful than myself. This realization led me to conclude that "if I can't outrun them, I had better be able to out-gun them." Thus, I set out to provide myself with a paintgun that would give me that edge. From quick changes, to Hi-performance valve designs, to Some interesting concepts in launch tube (barrel) configuration; the steps were taken to reach the highest levels of ON-FIELD effectiveness. The next step was to take the most accurate and most dependable gun that I had, and automate it. I built my first semi-auto paintgun in November 1988 and I am still using that first gun, regularly. During this time, this gun (Camille) has fired an estimated 1,000,000 shots while needing only one (1) repair. That one repair was needed for a failed valve seal during the first few weeks of its existence. There has not been a need to take the gun apart since then. (The cause of that one failure has long since been eliminated.) Our paintguns are designed and built to be the most effective equipment on the Paintball field without compromising Accuracy, Firepower, or Dependability. If you pay a little attention to, and take care of this equipment, it can last a lifetime and give you more control over your game than you ever thought

possible. Design characteristics allow the use of this equipment in just about any environment/weather conditions that you might want to play in; Without taking away from or adding anything to it. There are two (2) adjustments that must be made occasionally to accomplish this. One adjustment to keep the velocity of the Paintball at a safe but effective speed. The other adjustment is to maintain the pressure for the automation system at proper operating levels. (more details on these adjustments later) The reason for having these adjustments built in is that the pressure of CO₂ changes as the temperature of it's storage container changes. (Example: 50 degrees F. equals 600 p.s.i. and 100 degrees F. equals 1300 p.s.i. approx.) This is the nature of CO₂, so an effective paintgun must be easily adaptable easily to such a wide range of conditions. Your paintgun has but one purpose; to hit what you aim at, so as to Eliminate Opponents. What you now have is the best thing possible to accomplish that purpose! The following Information will show you what you must do for your paintgun so that your paintgun can do its job effectively for you. Keep in mind that your paintgun cannot play the game for you. However, if you give 110% to your game, this paintgun can keep up with you.

WARNINGS

READ AND REMEMBER
THERE MAY BE A QUIZ !!

CAUTION: This is not a toy and should be used only under adult supervision. Misuse or careless use may cause serious injury - especially to the eyes. Users and observers must wear approved eye and face protection!!!

Do not insert fingers into action when the gun is cocked or gas supply is attached. This gun is powered by CO₂ gas under very high pressure. Extreme care should be taken when any gas source is attached to the gun!!!! May be dangerous up to 100 yards. (91 meters) Use a barrel plug when not on the playing field. Always assume that this paintgun is loaded and potentially dangerous. When handling, always CHECK to make sure that it is not loaded. NEVER leave the CO₂ gas supply attached to any paintgun when it is not in use. NEVER use a CO₂ bottle that is over heated. Follow DISCHARGE PROCEDURE immediately after playing! Point only at things that you INTEND to shoot! SPECIAL CAUTION!! Use only D.O.T. approved CO₂ cylinders with a high quality pin-type screw-in valve that is properly installed and torqued (tightened) into the cylinder. A loose bottle valve can be extremely dangerous. A CO₂ bottle could become a deadly, high velocity, projectile!!!!

The use of LIQUID CO₂ should be reserved for very cold weather conditions ; 32 degrees or below. This paintgun is tolerant of liquid, but a steady diet of liquid CO₂ will cause erratic behavior and may shorten the effective lifespan of any paintgun.

Do Not use an expansion chamber on this equipment; especially in cold weather. Over expansion of the CO₂ greatly reduces its natural potential energy and you will find it difficult, if not impossible, to reach and maintain effective and consistent velocities.

Maximum Velocity is 300 feet per second. - 205 miles per hour- Velocities over 300 fps must be avoided as Injuries may result or you could make somebody very angry !!! (275 fps to 285 fps should give you the best results).

Now that you know, or should know, what it is that you have to work with, lets go shooting.

BECOME FAMILIAR WITH YOUR EQUIPMENT

The Items you will need:

- 1) Paintgun
- 2) CO2 Bottle
- 3) Hex Wrench(s) (Allen type) 3/16" and 5/64"
- 4) Operating Instructions
- 5) a Feed System
- 6) lubricating Oil
- 7) Desire to learn

BECOME FAMILIAR WITH YOUR PAINTGUN'S FEATURES

- 1) [Regulator Adjusting Screw](#)
- 2) [Velocity Adjusting Screw](#)
- 3) [Bolt Connecting Pin](#)
- 4) [Gas Supply Receiver \(GSR\)](#)
- 5) [Ball Feed Detent](#)
- 6) [Operating Cylinder and Connecting Link](#)
- 7) Bolt Assembly
- 8) [Safety](#)

START UP PROCEDURE

1. Point the gun UP (to not get liquid into gun when charging).
2. Pull and Hold trigger to the rear. (to know when gun is charged and to begin cycle of operation).
3. Screw in CO2 bottle (Operating cylinder should move the bolt to the rear, rapidly).
4. Release the trigger fully. (The bolt should return to the forward position, just as rapidly. The gun should now be cocked and ready to fire. If not, see REGULATOR instructions).
5. PULL and RELEASE the trigger fully for complete cycling. (the system should operate smoothly and quickly. If not, see REGULATOR instructions and adjust for proper operating pressure as needed).
6. PULL back and hold the trigger (to check for proper operating pressure), push on the back of the bolt while holding the trigger back it should be spongy but hard to push in. If it feels right, you are set and ready to go, if not, refer to REGULATOR instructions.
7. Put safety on and insert a barrel plug into the muzzle.
8. Install loader and ad paintballs.
9. Go to firing range or the Paintball field.

10. Remove the barrel plug, disengage safety and HAVE A GOOD TIME!! SAFELY, please.
11. Set velocity to any level below 300 fps. Use a chronograph! Don't guess!!!

REGULATOR ADJUSTMENT

The operating system regulator is the heart of this automation system. This regulator reduces the normally high pressure of CO2 down to a lower pressure (approx. 80 to 100 psi.) for safe and efficient use in the automation system; that is separate from the firing system. As the temperature rises and lowers, the pressure of stored CO2 will also go up and down (low temp. = lower pressures, high temp. = higher pressures). The variations in supply pressure make it necessary to adjust the system regulator from time to time to maintain proper operating pressures. This system's regulator is specifically designed for use with CO2 and to minimize the need for adjustment. After an initial break-in period of approx. 2000-4000 shots, you should find that the regulator has "taken it's SET" and will need no further adjustment. The adjustment screw is located at the front end of the regulator housing (the tube on the right side of the paintgun for typhoons and in the front for most strokers) and requires a 3/16" HEXagon (allen type wrench) wrench to make any adjustments.

SPECIAL NOTE: as the supply pressure going into the regulator goes up or down, the pressure from the regulator to the system will go up and down exactly opposite. (IE. Supply pressure up = regulated pressure down and vice versa.) As you become familiar with this system, you will discover that there is an operational SWEET SPOT. (The point of adjustment where everything is working just right) Find that SWEET SPOT and leave it there!! Adjustments should only be made when necessary; Which should only be because of extreme weather condition changes (or during the normal Break-in period). The way to find your paintgun's SWEET SPOT follows:

PROCEDURE

1. Be sure that the temperatures of the paintgun, the CO2 bottle and the air are all the same. This is important to establish an initial balance.
2. Check Pressure (This is done while holding the trigger back, thus keeping the bolt held back). While the bolt is back, try to push it forward. It should move a little but be stiff, (about like trying to squeeze a super ball). If the pressure is too low, the gun probably will not cock and the bolt will be too easy to move forward. If the pressure is too high the bolt will feel rigid and be almost unmovable. (Extreme high pressure may cause the trigger to stick in rear position when released or the OVER PRESSURE RELIEF system will activate, allowing gas to escape through the hole near the regulator adjusting screw).
3. ADJUST the OPERATING PRESSURE only as needed. To INCREASE pressure, turn the regulator adjusting screw CLOCKWISE; to DECREASE pressure turn the regulator adjusting screw COUNTER-CLOCKWISE. To make adjustments, use the 3/16" HEX (Allen type) wrench provided. Make adjustments only 1/4 turn at a time. Cycle the gun a few times and check pressure after each adjustment.

THE GOAL HERE IS TO FIND THE LOWEST PRESSURE THAT PROVIDES FULL CYCLING OPERATION. THEN, INCREASE THE PRESSURE BY 1/4 TO 1/2 TURN ON THE ADJUSTING SCREW.

The regulator should now be set properly and should only need to be re-adjusted occasionally during the short break-in period of about 2000-3000 shots. This break-in period is needed to allow the springs and seals of the regulator to take their "SET". Once the regulator has settled in, you may not find it necessary to ever adjust it again.

SYMPTOMS THAT WOULD SHOW THAT ADJUSTMENT IS NEEDED AND PROBABLE SOLUTIONS

- * Bolt does not move at all when air is applied. Check gas supply, check safety, Increase pressure.
- * Bolt comes only part way back and returns forward when the trigger is released. Check gas supply, increase pressure.
- * Bolt comes almost all the way back but does not return when trigger is released.
- * Pull the bolt to the rear and release, it will return forward, increase pressure slightly.
- * Bolt snaps to rear but does not return when the trigger is released and the trigger does not return to full forward position. Pressure is too high!!! Help the trigger forward, (bolt should also return forward). DECREASE pressure, check gas supply.
- * Gas escaping at the hole near regulator adjusting screw means that the Over Pressure Relief is activated and is venting. (leaking) Pressure is way to high!!! DECREASE pressure immediately!!

IMPORTANT NOTE; the OVER PRESSURE RELIEF valve will RESET itself when the regulated pressure has been lowered to normal operating pressure.

REMINDER: Turn the regulator adjusting knob CLOCKWISE to INCREASE pressure and COUNTER CLOCKWISE to DECREASE pressure for the automation system.
(Or as LORI would say, "Righty - Tightly, Lefty - Loosey")

VELOCITY ADJUSTMENT

This adjustment is to set the speed (velocity) that you want to fire a paintball A HEXagon wrench (Allen type wrench) is required 5/64 for back-bottle style or 3/16 for other styles. The VELOCITY ADJUSTING SCREW is located at the very rear of the lower tube. See photos following this section. Turn the adjusting screw CLOCKWISE to INCREASE the velocity or COUNTER-CLOCKWISE to DECREASE the velocity. What this adjustment does is change the spring tension behind the hammer. This determines how hard the hammer hits the valve open, to let air out, and push the ball down the barrel. For best results, adjust velocity to approximately 280 f.p.s..

USE A CHRONOGRAPH, DON'T GUESS!!!

ANOTHER SPECIAL NOTE: The automation system regulator and the velocity adjusting system are completely separate: Neither adjustment should have any effect on the other!

PAINTGUN ANATOMY

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BOLT CONNECTING PIN

This is the retractable pin with the knurled silver knob that passes through and is affixed to the rear of the bolt. It allows for ultra quick removal of the bolt when cleaning is needed (which should not be very often). To remove the bolt: Pull out on the knob to retract the pin from the connecting link. While holding the knob out, rotate it clockwise from the 2 o'clock position to the 4 o'clock position then pull straight to the rear. To reinstall the bolt, reverse the previous procedure. There is a stud located in the bottom center of the bolt that must travel through a slot machined into the lower left rear of the barrel. Be certain that the pin is engaged fully with the connecting link before operating. Note: The removal of the bolt may be different on some conversions if a "strip notch" had previously been machined into the gun.

GAS SUPPLY RECEIVER

The gas supply receiver (also known as A.S.A. air system adapter) will accept only standard Pin-Valve type tanks or appropriate hose adapters that have an O-ring seal around the front end. NOTE: STANDARD PIPE FITTINGS WILL NOT WORK! The pin valve is opened by a stud in the bottom of the gas supply receiver. To charge the gun, screw in the tank only far enough to open the valve and stop there. This will help to prolong the life of the O-ring. If you continue to turn the valve into the receiver under pressure, damage to the O-ring may result. A little oil or light grease on the threads of the valve and receiver will also reduce wear. IMPORTANT---Keep the gas supply receiver and tank valves clean!! Grit in the gas supply will damage seals and moving parts.

BALL FEED DETENT

This is a small but important part of the proper operation (feeding and loading) of your paintgun. It consists of C-shaped spring and a 1/4" delrin ball. The delrin ball protrudes into the feed port area of the barrel to maintain proper positioning of the paintball, so it can be pushed smoothly into the barrel by the bolt. In other words, the ball feed detent stops double feeding. Removal of the ball feed detent must be done carefully. Take care not to stretch the C-shaped spring out of shape. Squeeze in on the "C" to tighten the spring when reinstalling the detent.

Operating Cylinder

This is the tube on the right side of the paintgun. When the 4-way valve is actuated, air from the pneumatic regulator fills the front end of the cylinder, also called a RAM, forcing it rearward, recocking the gun and allowing another ball to be loaded into the chamber. When the trigger is released, air flow is directed to the rear end of the cylinder, forcing it forward, bringing the bolt with it, sealing the breech.

SAFETY

The Safety is a functional part of this equipment and should be engaged whenever the paintgun is not in use. The Safety blocks the trigger from being pulled accidentally. On pistols (Typhoon and STROKER) it is a sliding pin located behind the trigger. Move the pin to the right for Safe and to the left for Fire. A red ring around the pin will be visible on the left when in the Fire position. On the Hurricane, the Safety is a rocker type switch located above the trigger at the rear of the gun and is marked with F & S. (Fire & Safe)

SAVE THE EYES... USE THE SAFETY and a BARREL PLUG

DISCHARGE PROCEDURE

As soon as possible after using your paintgun, you should always remove the gas supply. NEVER leave a pressurized gun unattended!!! The best way to clear your gun is to unscrew the tank ONLY 1/8 to 1/4 turn counter clockwise then fire the gun in a safe direction until no gas remains in the gun. Then remove the tank completely. If you unscrew the tank while under pressure, the high pressure gas escaping past the 0-ring can and will damage the 0-ring. (A small stream of high pressure gas can cut like a knife.)

MAINTENANCE !!!

Lack of proper maintenance can cause the early death of any machine!! You paid good money for this equipment; now, take care of it!!! MAINTENANCE = Regular [CLEANING](#) and [LUBRICATION](#) Keep your equipment clean and properly lubricated and you can expect many years of trouble free operation.

LUBRICATION

A necessary parts of proper maintenance! If you want your paintgun to enjoy a long and trouble free life, proper lubrication is essential. There is a bottle of oil included with this gun; use it frequently but sparingly. Use only approved lubricants like AIR TOOL oil or DOW33. Air Tool oil is provided with your gun and is available at Palmer's or your local Hardware or Tool Supply. DO NOT USE SPRAY ON LUBRICANTS OR WHITE LITHIUM GREASE. Most spray lubricants contain solvents that can be harmful to seals. CO2 and Lithium grease combine to become something close to chewing gum. Only about 7 to 9 drops of oil are required to lubricate your paintgun completely. One drop of oil on each of the 0-rings of the bolt (3). Two or three drops to the hammer and mainspring (applied through the slot in the rear of the barrel, under the bolt... and two or three drops into the pneumatic system. To lubricate the system internally, apply oil to the depression in the face of the tank valve or apply directly into the gas supply receiver, then charge the gun up and fire several times. CO2 moving through the gun will distribute the oil as needed. Any excess oil will pass through the gun and some excess oil will be deposited in the barrel, reducing accuracy if not removed. Internal lubrication of the Pneumatic system is only needed every 2000 to 3000 shots. Remember, only 2 or 3 drops of oil at a time.

CLEANING

The best thing that we have found to thoroughly clean your paintgun with is WARM WATER and lots of it. At the field, a spray bottle with a strong stream will do. At home, try the kitchen sink. Save water and take your paintgun into the shower with you. Remove the bolt for cleaning. The bolt is the only part that you should have to remove, even for the most thorough cleaning. Flush the gun thoroughly with warm water. This will remove any dirt, paint, gelatin and most of the oil. Shake out any excess water. Compressed air or a home blow dryer, on WARM only, will help to get the water out. After drying the outside, charge up the gun and fire (in a safe direction with no paint) several times to get the moisture out of the internals. Remove the CO2 supply and lubricate as directed (next section). Recharge the paintgun and fire several more times to spread the lubrication throughout the system. Now its clean and ready for action or storage. Before shooting, swab the barrel with a clean, dry swab, cloth or paper towel. Accuracy depends on a clean and dry barrel. Any thing less than immaculate will not allow the accuracy that you expect. On field cleaning can be done in just a few seconds by removing the bolt and pushing a swab through from the rear. A double ended swab works best. A mixture of water and alcohol helps speed up the drying process when at the field. Water will cause no harm to this paintgun because of the materials used in its manufacture. Thorough cleaning should not take more than 5 to 10 minutes.

TROUBLE SHOOTING

Our paintguns and this manual are products of nearly six years of research and development, heavy use and abuse, severe testing and critical evaluation. We have strived to provide our customers with the most trouble free equipment possible. What you will read here comes from our experience over the years of trying to fulfill our goal of superior and lasting performance. Your understanding of this equipment will help us to meet these goals. If you should discover ways to improve on the product and/or this manual, please let us know so we can pass it on for others.

The most common causes of trouble are:

- * Improper regulator setting: See [REGULATOR ADJUSTMENT](#) section.
- * Lack of proper maintenance (Too much dirt, not enough oil): Refer to [MAINTENANCE](#) and [LUBRICATION](#) sections.
- * Improper gas supply: Empty or nearly empty CO2 bottle, an over filled bottle, or an improperly operating bottle valve will cause erratic operation and a wide range in velocity variation. (The gas supply is the first thing we check when a problem occurs).
- * Improper re-assembly: Usually indicated by leaking air fittings and seals, or improper timing of the firing and re-cocking sequence. (If you simply must take it apart, be sure you know what you are doing, have replacement seals and gaskets handy and use the proper tools with a firm but gentle hand). If you have ANY doubts, call for assistance. Seek the help of a [QUALIFIED PROFESSIONAL!!](#)
- * Breaking or cutting paintballs during rapid firing: Most commonly caused by improper trigger

operation; (IE. "SHORT STROKING" the trigger. A FULL trigger pull and release is required for proper operation. Familiarize yourself with the operation of the trigger by shooting a bottle-full of air only before using paint. You will easily know when you have miss-stroked the trigger by the sound of the shot. Also be sure that the Ball Feed index unit is in proper position and that the regulator is properly adjusted.

NOTE: Rapid firing of long strings of shots may also cause problems with feeding from simply outrunning the loader.

* Air Leaks: Air (CO₂) heard escaping down the barrel suggests a damaged or contaminated exhaust valve (aka: cup seal) that probably should be replaced. This requires the same special tools as used in Sheridan/PMI paintguns. SPECIAL NOTE: There is a set screw into the bottom of the lower receiver tube, under the grip frame, which must be removed before you can remove the valve components.

* Other air leaks can be easily located by applying soapy water to the suspect area, and can often be cured by the gentle tightening of a fitting or the replacement of a gasket.

* Contact PALMER'S PURSUIT SHOP for assistance if you should encounter any leaks. (Especially any internal ones that you cannot locate with soapy water.)

* High temperature weather conditions, (above 90 degrees F.) may cause some erratic behavior due to the nature of CO₂. At these temperatures CO₂ just does not want to be a liquid anymore, and pressures will change quite noticeably and quickly with just a few degrees in temperature change! This is really not a problem if you accept it as the nature of things, and adjust as needed. Refer to REGULATOR ADJUSTMENT section.

* Bolt comes to the rear and a ball feeds into the barrel but does not fire (usually indicated by two or more balls being pushed into the barrel one after the other): Remove gas supply and pull the bolt to the rear manually. The bolt should pull the hammer back far enough to be caught by the sear (to be cocked) plus approx. 1/16". If not, an adjustment to the position of the bolt connecting link at the cylinder rod is required. Hold the link with a wrench and loosen the 7/16" jam nut. Turn the connecting link one-half to one full turn counter-clockwise to extend the distance that the bolt is pushed to the rear and tighten the jam nut and try it out.

* Unstable velocity conditions are usually a result of gas supply source conditions. Conditions such as an overfilled or overheated tank or a nearly empty or very cold tank at start-up will cause wide variations in velocities during use. It is important to use a properly filled, tank that has been allowed to warm up to present air temperature, at start-up. Ideally, a tank that is filled to slightly less than max. capacity should be used. (Example: 11oz. in a 12oz. tank) Here is why: If you use a tank that is overfilled or overheated, the pressure inside the gun will be higher than normal which means that there is higher pressure holding the valve closed. This then makes it necessary to increase the tension on the hammer spring to generate enough force to drive the valve open against the higher pressure. Then, as the gas is consumed the pressure in the tank and the gun goes down and there is less pressure holding the valve closed. With less resistance, the hammer will now drive the valve open further and hold it open longer causing the velocity to noticeably rise. Just the opposite happens with a freshly filled, very cold tank. Lower pressure holding the valve closed = less hammer force needed to drive the firing valve open. Then the pressure goes up and there isn't enough hammer force to get the valve open far enough and the velocity goes down. Although, if you start out with the gun, the tank and the air all at the same temperature, you will see very little change in velocity during use.

AUTOMATION TIMING

The cycles of operation; Firing, Cocking, Feeding, Loading, must happen in the right order or this paintgun will not work properly. In these paintguns, proper timing is accomplished by the trigger operation of two systems simultaneously, in proper sequence. The hammer must be released by the sear, to hit the valve, just slightly BEFORE the the 4-way valve is activated, by the bellcrank, to push the bolt rearward. The mechanism to accomplish this operation is located inside the trigger frame, under the grips. The trigger- bellcrank push-rod connector, at the bellcrank (L-shaped white plastic piece), is the only adjustment that might unfavorably affect the timing. Both the trigger and the push-rod connector should be in the fully forward position when the clamping screw is tightened. Also, check inside the frame for: Centered positioning of the 4-way valve. No pinched or kinked tubing No foreign matter to bind the parts. If you should run into a situation that you do not understand about this paintgun, please refer back to earlier sections of this manual prior to calling Palmer's Pursuit Shop. (916) 923-9676 If and then you call for assistance, one of the first questions that you will be asked by our staff is; Did you read the Operators Manual? If you haven't, you may be asked to call back after you have read it.



REPAIRS AND SERVICE

THERE ARE SOME THINGS THAT ARE BETTER LEFT TO A PROFESSIONAL!!!

We at Palmer's Pursuit Shop take great pride in offering to you, the customer, a high quality and a highly dependable piece of equipment. We want you to have that same pride and confidence, allowing you the highest levels of enjoyment and accomplishment in your game. To achieve this, we thoroughly test and very critically inspect each and every piece of equipment before delivery. As of yet, none of us here are able to walk on water! So, it is possible that you may find yourself in need of advanced service and/or repair to your paintgun. If so, we will be here to help keep your paintgun performing at the highest levels of effectiveness. We don't just stand behind our products; we stand WITH our products! Palmers Pursuit Shop warrants this paintgun to be free from defects in materials and/or workmanship, to the original purchaser, for one year. [See enclosed warranty sheet.] Any needed service/repair under Palmer's warranty will be done at Palmer's Pursuit Shop only, unless otherwise directed by Palmer. Any and all warranty work needed will be done IMMEDIATELY upon arrival at our shop and returned ASAP. You may be shooting it but "it is still my baby, and I don't mind taking care of it" is the way GLENN PALMER feels about it. Always seek the help of a QUALIFIED PROFESSIONAL for service and repair of any equipment! "If it isn't broke, don't fix it!" If you mess with it you may find yourself responsible for it. Refer to the [TROUBLE SHOOTING SECTION](#).

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