



# MILSIG HEAT CORE MAINTENANCE GUIDE

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Maintenance guide for the HEAT Core System in the Paradigm PRO and MK3 marker

**By Jasper Tam - MILSIG Certified Tech**

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**MILSIG Paintball Canada Ltd.  
#135-11780 River Road  
Richmond, BC  
Canada V6X 1Z7**

**Tel: 604-278-6566  
Fax: 1-866-542-9861**

**Web: [www.milsig.ca](http://www.milsig.ca)**

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In this tutorial you will learn how to clean and maintain top efficiency of your HEAT Core System in the MILSIG Paradigm Pro and MK3 Markers.

Tools that you will need are:

- 3.0mm Allen key
- Clean cloth
- Paper towel
- Barrel squeegee
- Soapy water
- Blow dryer
- MILSIG SOS lubricant

## **WARNING!!**

DO NOT open up Air Regulator Cap for it is factory set and any tampering will void all warranty.



Figure 1 Do NOT unscrew the regulator cap without authorization.

Velocity adjustment is done by Velocity Adjustment Set Screw, located in the center of the regulator cap, using the 3.0mm Allen Key provided.

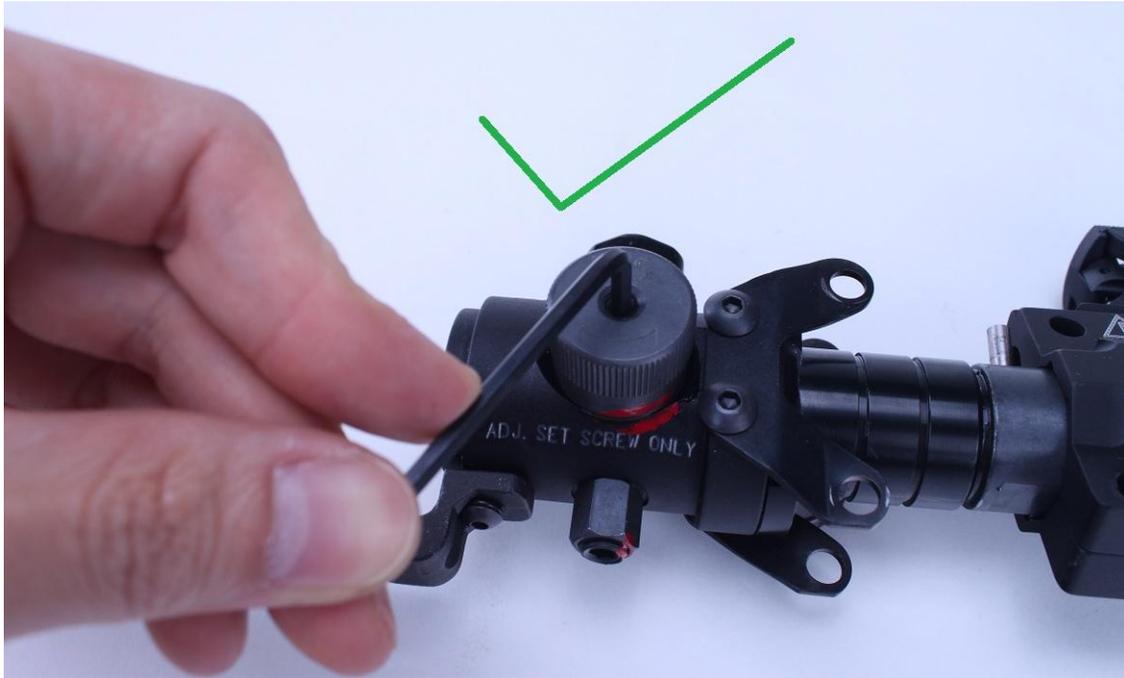


Figure 2 Location for velocity adjustment. (Clockwise to increase fps, counter clockwise to decrease fps)

The blow off valve is set to pulse release over pressurized markers at about 450psi and will fully vent all gas at 500psi as complete blow off. This is designed for player's safety and marker's durability therefore any tampering will void all warranty and that MILSIG is not liable for such action.



Figure 3 Do NOT tamper with Pressure Release valve.

## EXTRACTING THE HEAT CORE SYSTEM

### **Drop the mag and let the air out the marker**

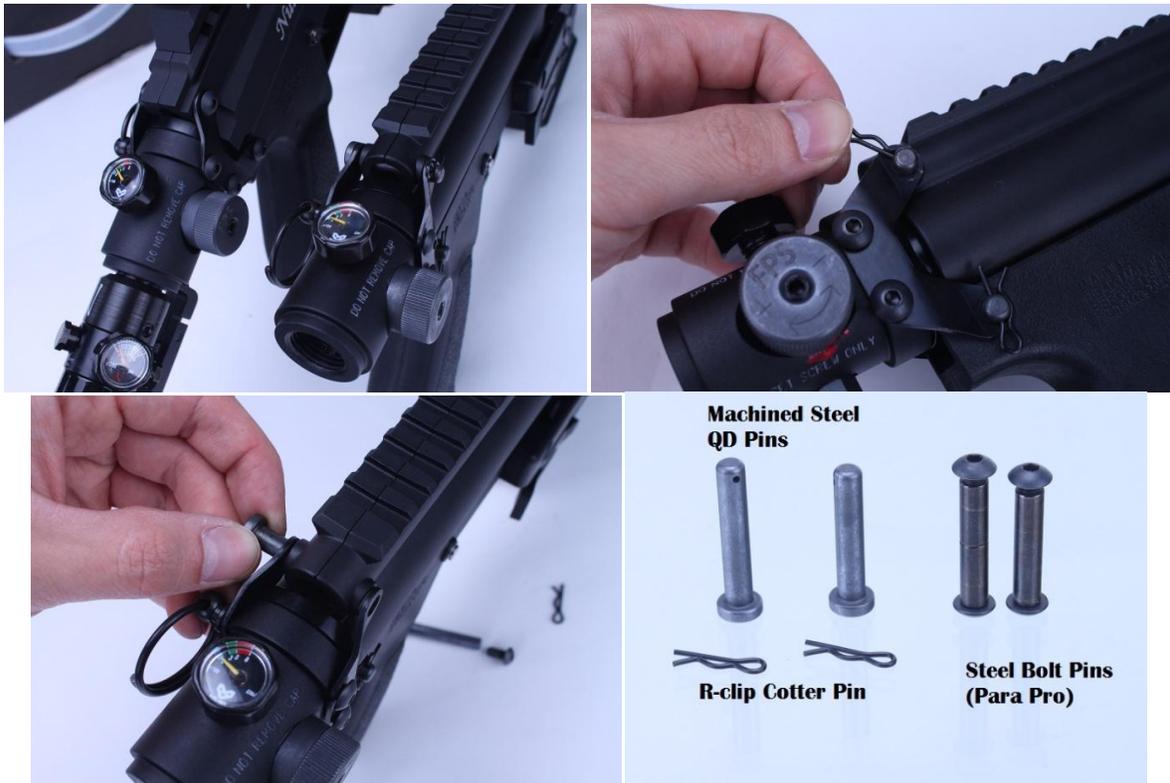
First remove the magazine from the marker.

Remove the 13CI tank or any air supply connected to the HEAT Core.

Pull the trigger to release any remaining pressurized gas from the marker.

### **Remove the rear stock pins**

Paradigm Pro comes with a set of steel bolt pins and a set of machined steel QD pins that are locked in place by R-clip cotter pin.



Steel bolt pins are installed from factory to prevent scratching the body. If you prefer to use the QD pins please trim down the R-clip cotter lock pins to prevent scratching of the body.

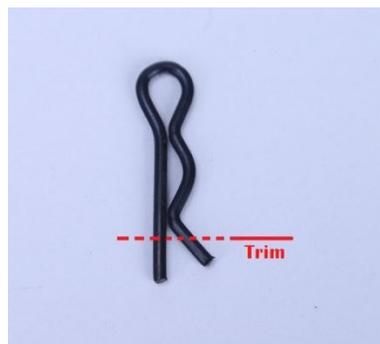


Figure 4 Suggested Trim length of R-clip cotter lock pin

**Caution!!!** DO not use QD pins from previous generation MK2 for they are machined Aluminum and not machined Steel. MK3 are backward compatible and can withhold the forces of being used as a ladder.

### Extract the Core

Similar to previous designs the butt plate is under compression and it is advised to hold the stock down firmly while the back pins are being removed.



Figure 5 HEAT Core extraction.

In a straight upward motion, pull the regulator and the core out. Take care not to drop the spring and bolt guide once the core is out of the body.



Figure 6 Paradigm Pro HEAT Core

MK3 uses Delrin® material for the bolt which is softer and easier on paintball impact when loading. Paradigm Pro uses aluminum bolt which is selected for First Strike tolerance.



Figure 7 MK3's HEAT Core

**Remove the GAS BOLT to reveal the GAS NOZZLE**



Figure 8 Para (Left) MK3 (Right)

Clean off any dirt and debris trapped in the ring grooves and surfaces with damp cloth. Ring grooves are designed to trap debris that may scratch or Jam the bolt.



Figure 9 Clean the surface of Gas Chamber and Nozzle interface.

### Clean and Re-lubricate

Look inside the GAS CHAMBER NOZZLE to find an orange o-ring.



Carefully clean this o-ring with Q-tip and re-oil with SOS lube. *This is the most important maintenance step. This o-ring is made from special material for the most critical and demanding seal in the system. Do not use anything other than well mixed SOS lubricant. (Viton® Fluoroelastomer O-Rings Resists chemicals and oil.)*



### Cleaning the Receiver

Open up the side cover.



Run a squeegee through the marker barrel with warm soapy water until paint and or damage debris are removed. Use a tooth brush for stubborn paint. Then wipe dry with paper towel and blow dry.



### REASSEMBLY

Reinstall in ---- this order ----



Insert the HEAR Core back into the marker sideways.



Take care to orientate the hammer guide pin to the top of the receiver body as shown above.



Figure 10 Check the bolt guide is secured and is in the correct orientation before reinserting.

Insert the upper lock pin.



Pivot the lower grip back into place and insert the lower pin.

**Special Operating Tips:**

To reduce the hassle of inserting the removing the 13CI tank under pressure and ball chopping, refill the tank connected to the marker while it's pressure is above 1000psi or before the marker's internal air chamber is empty (burping will occur when internal pressure is not enough to compress the return recoil spring with enough force to battery). This will prevent the marker from reaching the minimum operational pressure or remain in a state where the hammer is stuck between fully battery and projectile loading position.

Ideally the marker takes in Air source at 3000psi in the 13CI tank --> This gets regulated to 800psi from the tank's build in regulator --> Then again this supply gets regulated down to 300-400psi in the marker's regulator before filling the GAS CHAMBER of the HEAT Core.



Figure 11 Always insert the 13CI bottle or Air Source that is pressurized to over 1000psi.

To prevent burping when gassing up the marker, always insert full tank with the marker regulator dialed down.



Figure 12 Open up the regulator to increase marker's pressure until indicator reach green zone.

Once the tank is inserted tightly, dial the marker's regulator up quickly and smoothly. The markers have been tested to shoot over 110 shots at 300fps on a regular 13CI sized air tank at 5degree Celsius.



Figure 13 Fire two shots to allow the pressure inside the marker to stabilize before chronoing.

The weights of the trigger pull increase as the marker's pressure increase. That is why Electronic Triggers are not recommended.



Figure 14 Dial down the fps to your field's limit. Fire twice to allow marker's pressure to stabilize.

Any air source pressure below min operation pressure of 400psi and causes burping and ball chopping.



Figure 15 Marker's pressure-gauge indicates the marker's pressure is below green zone. Chances of burping increases.

As long as the marker remains pressurized at above operating pressure the tank can be refilled while attached to the marker.

**Special Note with First Strike:**

Broken fins from damaged first strike rounds can also cause bolt jam. Please inspect each round carefully when loading up the magazine.



Figure 16 First Strike round (Tiberius Arms 2012)

PARA PRO's barrel is 400mm long and rifled the entire way with no porting. It is not like a regular paintball marker for it is Primary a sniper weapon. FIRST STRIKE rounds accelerate a lot faster at 2x the acceleration of a regular paintball round due to its design and payload's weight therefore a longer rifled barrel is necessary for best stability to give the FIRST STRIKE round more rotation before leaving the barrel.

We highly recommend using the “.686” MILSIG MARKSMAN BARREL BACK (BA-019A) in conjunction with the PARA PRO barrel for best result with first strike.

MILSIG have embodied the knowledge, technologies and design from both Airsoft and Paintball to bring you products that break traditional thinking. Like the name suggest, it is ill advised to follow traditional paintball theories when it comes to the PARADIGM.

Do not under bore because the gap for air to go around the projectile actually helps stabilize the round leaving the barrel. This cushion of air traveling ahead of the round disrupts the air at the end of the barrel. Else the round will impact the still air like slapping your hand into a bucket of water or light beam being bent when entering a denser medium at an angle. A gradual transition is necessary to reduce these instability factors.