

## Warning

All audiences should read the proclamation of using this maintenance instruction manual carefully before view the content of maintenance instruction manual.

APS Paintball Limited



## Proclamation of using this maintenance instruction manual

- The term "APS" or "us" or "we" refers to APS Paintball Limited. The term "you" refers to the user of this maintenance instruction manual (known as "manual").
- The manual is a reference and information, which is made for person who has been trained and authorized to handle and repair Real Action Marker (known as "RAM") or its related accessories. For if person who is not trained and authorized to handle and repair RAM or its related accessories, please do not attempt to repair RAM or its related accessories yourself. We do not bear any indemnification, liability and responsibility for the damage or defective of the RAM or serious injury resulted from repairing the RAM without trained and authorization.

## Safety precaution

- For everyone authorized person who attempt to repair our RAM and its related accessories, please make sure any protective equipments (especially mask or goggle) at all time while repairing.
- Unless using cylinder tests the pressure of the RAM, the cylinder should not be installed onto the Marker while repairing. It decreases the risk and aim to be safe.



## A-Series

Maintenance Procedures

## A-series RAM Disassembling

Remove the muzzle



Remove the screw (on right) of the front sight



Remove the screw (on left) of the front sight



Un-install the front sight



Remove the screw (on the front left) of the barrel cover



Remove the screw (on the rear left) of the barrel cover



Remove the screw (on the front right) of the barrel cover



Remove the screw (on the rear right) of the barrel cover



Remove the barrel cover



Remove the top of the fore end hand guard and its cover



Remove the bottom of the fore end hand guard and its cover



After un-installed the hand guard



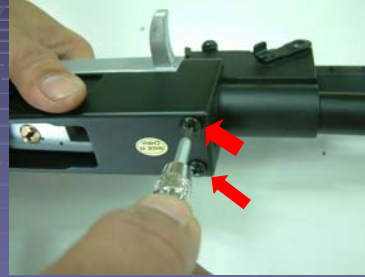
Remove the hand grip screw



Take out the hand grip



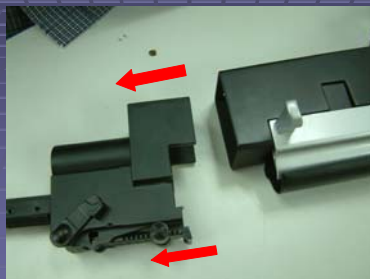
Remove the rear sight adaptor screw



Remove the barrel



Take out the rear sight adaptor



Remove the Upper body locking pin



Lift up the upper body



Remove the Safety Catch cover



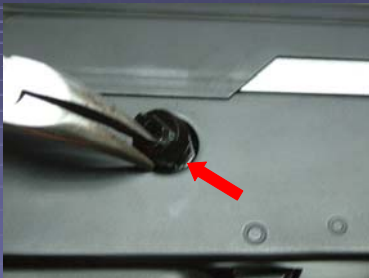
Remove the safety catch screw



Take out the safety catch



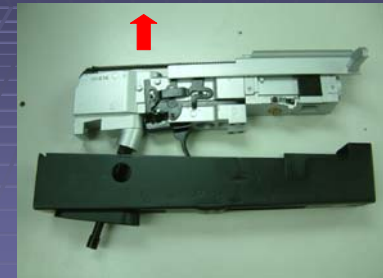
Take out the safety catch axle



Separate the core and the lower body



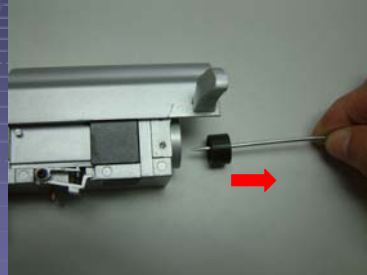
Take up the core



A-Series Marker Core



Take up the ball holder



Take out the ring



Take out the spring



Take out the handle bar



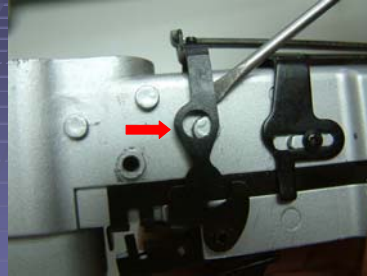
Take out the copper tube



Take out fire selector plate



Pull up the Pull Bar Locking Sheet



Lift up the Pull Bar Locking Sheet



Remove the screw



Remove the spring



Lift up the top bar and use a tool to hold the top bar



Lift up the top bar on the other side and use a tool to hold it



Take up the top bar using a tool



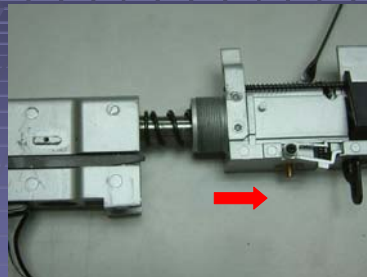
Pull backward the empty-bullet blocking bar



Unscrew the Launching compartment and place a iron plate inside the chamber to connect the magnet



Take out the launching compartment



Take out the main spring





Take out the launching rod



Take out the O-ring



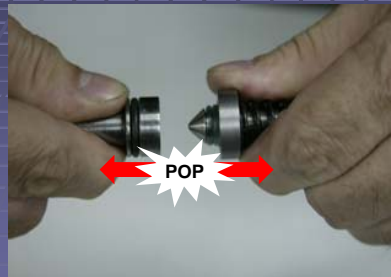
Take out the steel windpipe



Test the tightness of Launching Rod



If you cannot hear any "Pop" Sound when you pull out the Launch unit, it means it is loose and necessary to change O-rings



Change O-rings (supposed the Launch unit is loose)



Change new O-rings



Change new O-rings



Change new O-rings



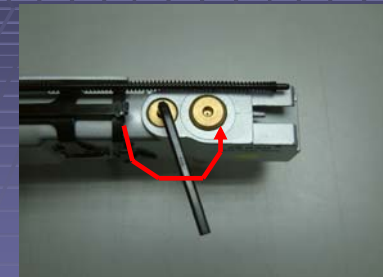
Test the tightness of Launching Rod again



Repair the pressure unit

- Before repairing the pressure unit, use the pressure gauge to check the pressure. See it is around 2.8MPa.

Remove the pressure unit screw



O-Ring Take out the pressure unit screw and install the pressure gauge (with an A-series adaptor)



See it is 2.8MPa or not.



When pressure gauge shows that the needle is rising rightward, it means the gas is leaking from the pressure unit. So first of all, switch off the valve of the cylinder and release the gas in the marker core, thereafter uninstall the cylinder and pressure gauge.



## Repair the pressure unit

Remove the pressure unit's screw



Take out the pressure unit



Take out the spring



Install a screw for removal the thimble



Remove the screw valve



Take out the valve, spring and the steel ball



Check any damages of Valve and O-ring



Check any damages of Valve and O-ring



Change new Valve and O-ring and re-install all parts of the pressure unit and test the pressure again until the pressure gauge shows at 2.8MPa approximately.



If the pressure gauge shows that the needle starts from 2.8MPa moving down to 2MPa or less, it means the gas is leaking from the trigger unit. Switch off the valve of the cylinder and release the gas in the marker core, thereafter uninstall the cylinder and pressure gauge.



## Repair the trigger unit

- Disassembling all parts in the trigger unit
- Change new valve and O-ring
- Refer to S-series Maintenance Procedures if necessary

**Repair** if Paintball Marker is functioned (shooting) automatically without pressing the trigger (self-firing).

Remove the valve pin from the valve end cap



Take out the O-ring



Pick up other O-rings



Change new O-rings



Add a bit grease oil on the valve pin



Put back the valve pin on the valve end cap



Test the valve pin smooth



Test the rate of fire

- After resolve the gas leaking problem from the pressure unit or trigger unit, re-check the pressure and make sure the needle on the pressure gauge is pointed to 2.8MPa approximately.
- If it passes, tight the rate of fire unit screw all the way and then turn back and loose it a bit.
- Then test the rate of fire "AUTO" mode.
- Push the fire selector controlling bar forward and press the trigger.
- The normal rate of fire is 3 to 4 shots per seconds.
- The tightness of the rate of fire unit screw will affect the performance of the firing (shooting) when users switch the firing selector to "AUTO".

## End of the Maintenance Procedures

- Assembling all parts and units
- Be noticed that the case ejector should be pressed down before combining the Body Group with the Hand Grip.
- Make sure the barrel is aligned when all parts and units have been assembled.
- Apply few drops of lubricant oil into the marker core if necessary.

## General Maintenance on RAM

(Apply to R-series, S-series and A-series)

Noticed:

Parts number will be different between each series but generally the part mentioned in the followings can be applied to each series.

## Gas Leaking

- From muzzle velocity unit – If Paintball Marker cannot shoot projectiles consistently, it is because pressure in the muzzle velocity unit is not steady. Check part 4110 and/or 4111A change them if damaged. (When pressure gauge shows that the needle is not keeping around 2.8 but rising to 4 or over, it means the pressure is not steady and moving rightward.)
- From the trigger unit – if gas is leaking without pressing the trigger, it means gas is leaking from the trigger unit. Check part 4129A and/or 4130 and change them if damaged. (When pressure gauge shows that the needle is not keeping around 2.8 but dropping to 1 or less, it means the pressure is not steady and moving leftward.)

## Gas Leaking (Con')

- Paintball Marker is functioned (shooting) automatically without pressing the trigger – It means O-rings (4133 and 4135) inside the trigger screw (4131) are too dry. Change them and add few drops of grease oil.
- From rate of fire unit – If gas is leaking and it is difficult to adjust the rate of fire, please change a new O-ring (4121) if necessary.

## Marker firing has a time lag

- A time lag is happened when the projectile is not shot out immediately as pressed the trigger. The reason is that the screw at the rate of fire unit is too tight; or the pressure does not reach 2.8MPa. First, loose the screw at the rate of fire unit. Turn it anticlockwise to adjust a little bit. If it is not improved, try to increase the pressure.

## Shot does not go straight

- Check the barrel if there is oily (too smoothed). It makes the shot does not go straight consistently.

### Case Jam

- Check the Launching Compartment Unit. If the surface inside the Compartment is rough due to the damage by the case ejector (causing by shooting empty), use a file to cut the rough texture out.
- If the case is jamming between the front of the Launching Compartment Unit and the Barrel Adaptor Cover, it is caused by the incorrect installation of the barrel. In this situation, it is necessary to adjust the barrel back to align the Launching Compartment Unit. Use a sharp tool to test that the Barrel Adaptor Cover does not interrupt the alignment.

### Projectile is not loaded

- If the projectile (case) does not rise up to the proper position, it means that the main magazine spring is depreciated or the inner core of the magazine is damaged. Check or change a new main magazine spring (4901). Change the inner core component of the magazine if damaged, too.

### Projectile falls out from the Magazine

- If the first projectile falls out from the magazine, possibly the casing hook (4909) is damaged; Or casing hook is not pressed when loading the projectile into the magazine. Change a new casing hook if necessary.

### Shot is fatigue

- Check O-rings (4142A and 4143A) in the Launching Compartment if both are too loose. Pull the Launching Compartment sideward by hand carefully. If it is ease to pull out without tension, change new O-rings (but both cannot tighten too much.)

### Safety Lever (Fire Selector) is loose

- If the fire selector is loose to fix on one position, especially when it is switched automatically from full auto mode to semi auto mode, change a new Locking micelle (4314) and spring (4315).
- Paintball Marker is function even Safety Lever (Fire Selector) is pointed at Safe mode
- Check that the screw in the valve unit is too tight or too loose.

### Case is not ejected

- After pressing the trigger and firing, the case is not ejected immediately. It means that the spring (4152A) of the case ejector is hooked on the case ejector properly; or the spring of the case ejector is broken. Hook it back onto the case ejector or change a new one if necessary.



## End of the maintenance instruction manual

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