

**RAW BM 500 Disassembly Steps- Photos, Reseal O-rings

Tuesday, July 16, 2024 3:53 PM

Take photos of each step, show orientation/placement/sequence of parts

Based on A Service Guide for the Theoben Rapid MKII available at Jimmie Dee's Airguns

<https://www.jimmiedeesairguns.com/guides/service-guides/theoben-rapid-mkii-service-guide/a-service-guide-for-the-theoben-rapid-mkii/>

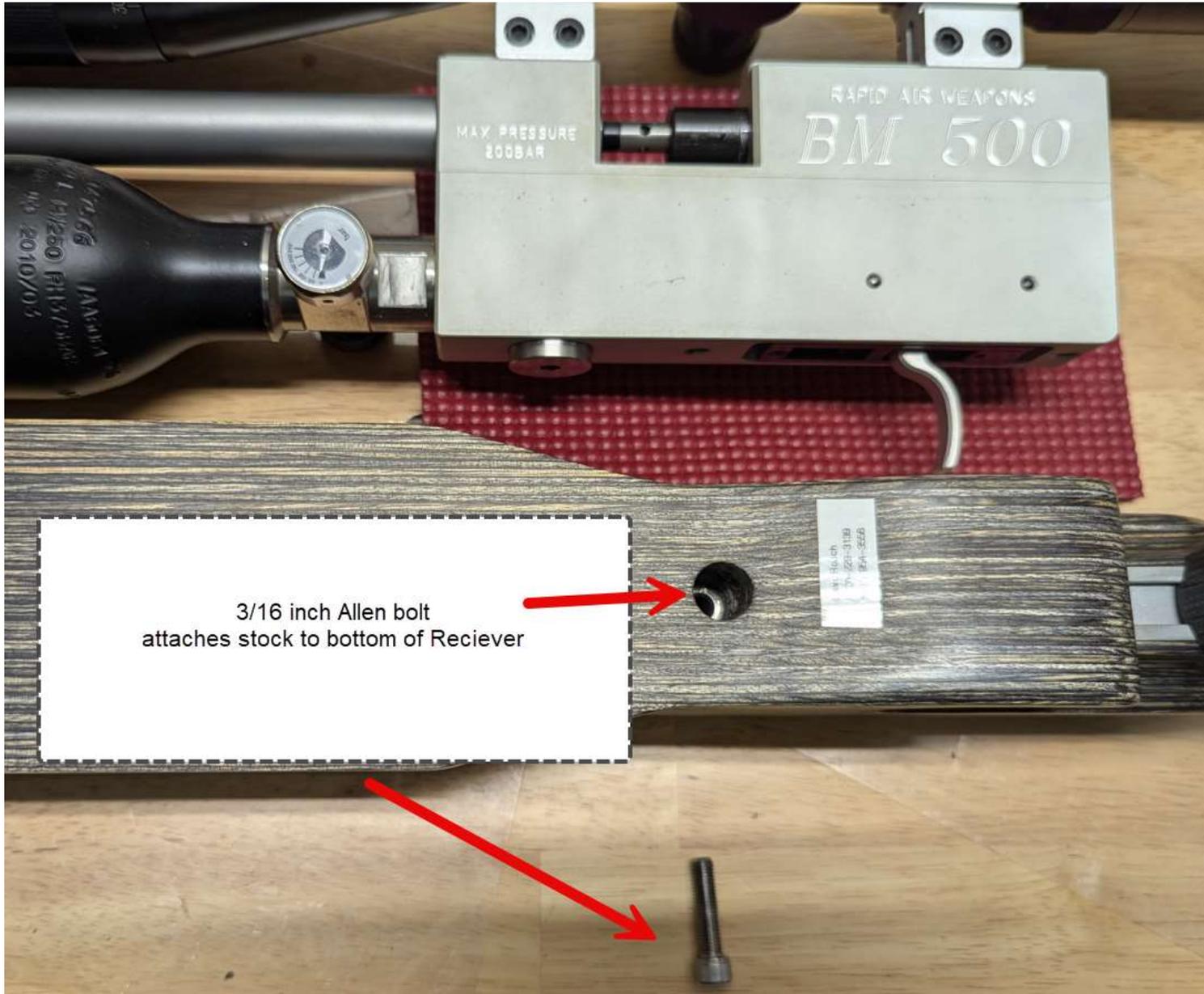
Thanks to Bhaur's Airguns

[RAW HM1000X & Rapid valve disassembly & reassembly \(English & Urdu\)](#)

[RAW HM1000X & Rapid .25 UPGRADATIONS PART 1 \(English & Urdu\)](#)

Begin Disassembly....

Remove stock from receiver with 3/16 inch Allen wrench



3/16 inch Allen bolt
attaches stock to bottom of Receiver

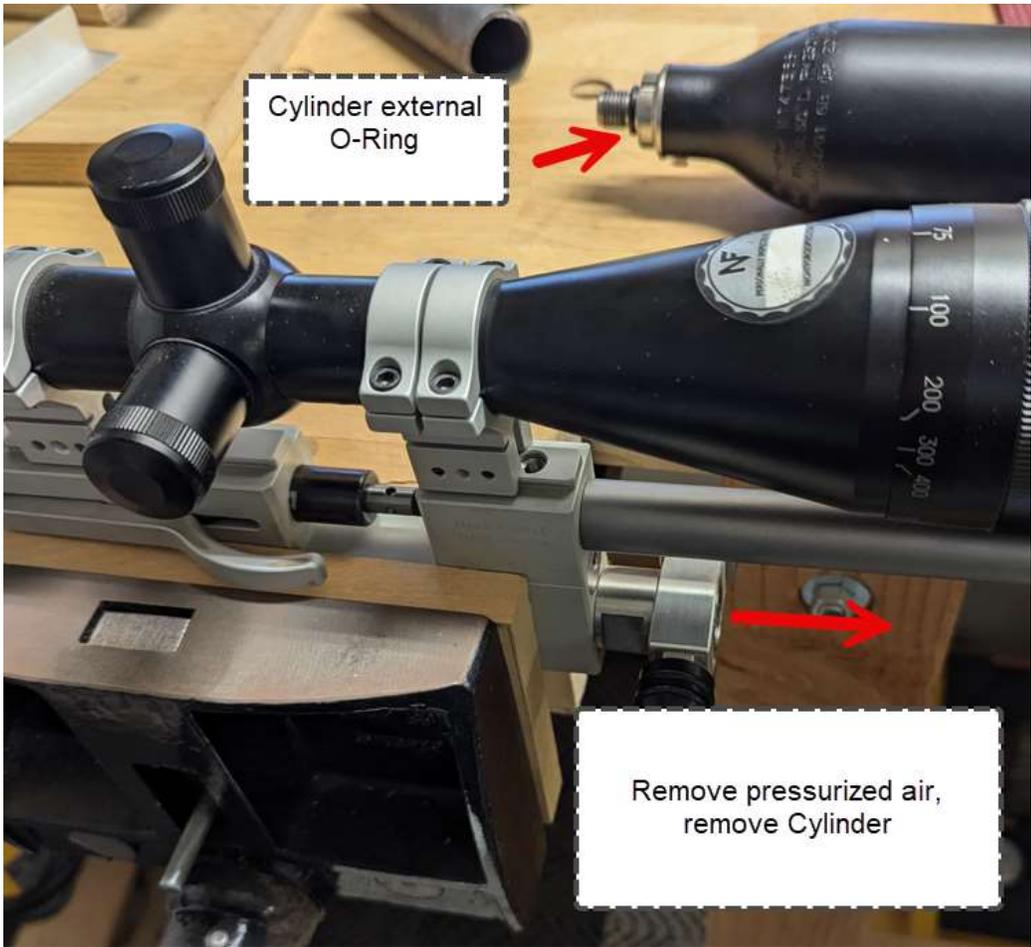
Remove cylinder

Cock & Dry fire 2-3 times

Rotate cylinder slightly

Dry fire

Rotate cylinder slightly
Dry fire
Rotate cylinder & pop
Remove cylinder



Remove Screw on right side of Receiver
Slowly loosen screw on side of receiver to bleed pressurized air



Remove Regulator

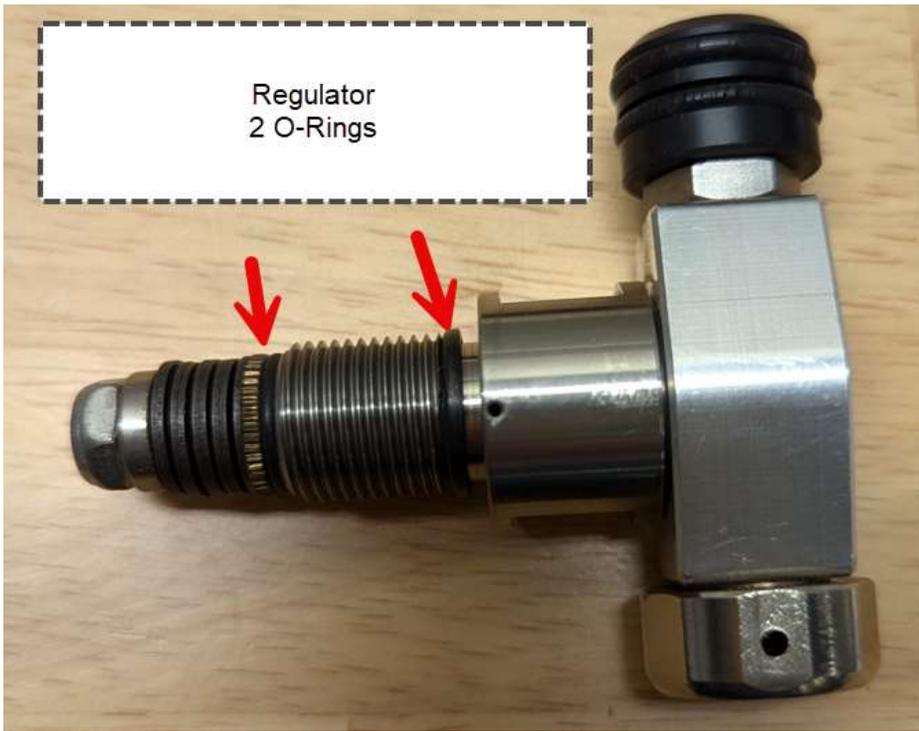
Use vice with non-scratch pads to stabilize Receiver, spanner wrench, hammer
Do NOT remove the Quick Fill/Gauge block so spring loaded fill valve remains in block
Place spanner wrench into flat notched surfaces on exposed portion of Regulator

Un-Thread the Regulator from front of Receiver
If don't remove barrel, must manually rotate Quick
Fill/Gage Block to avoid hitting barrel

flat wrench attach slots

spring

Quick fill/Guage
block showing
partially withdrawn
Regulator exposing
Fill Valve Spring



Remove Hammer Assembly

Hammer adjustment threaded Cap
on rear of Receiver

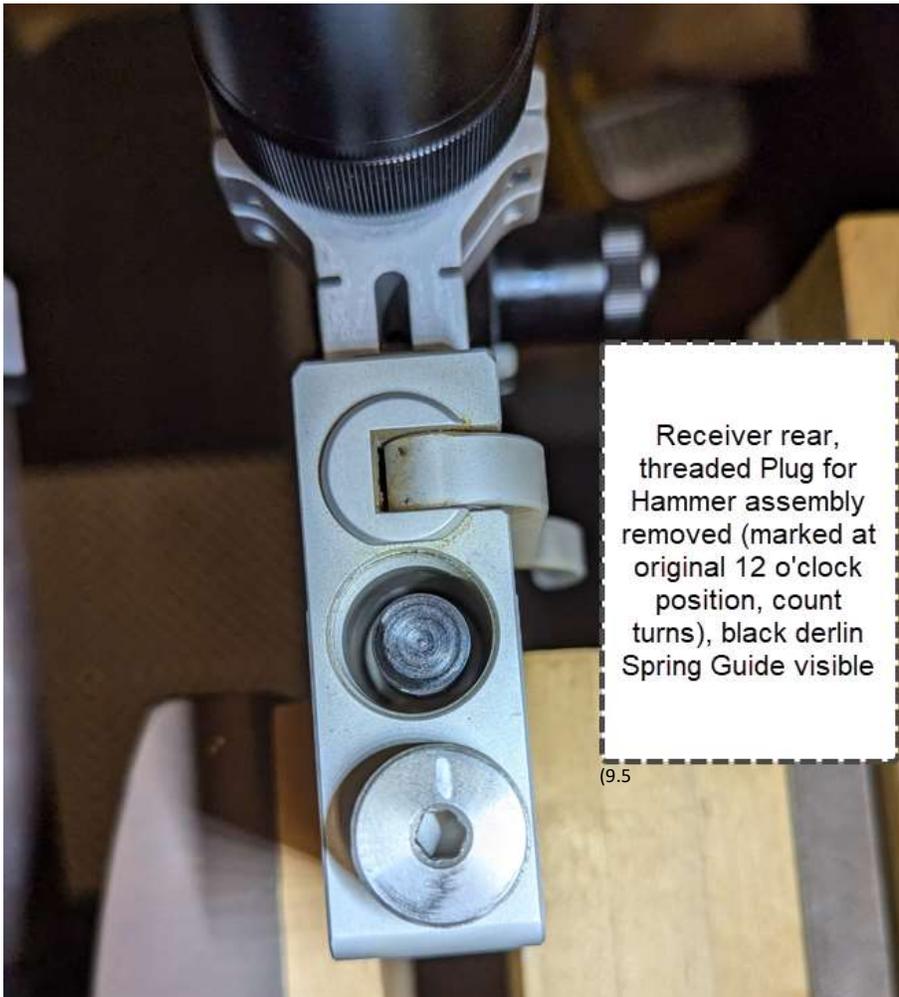




Trigger assembly must be removed before proceeding. Hammer can NOT be removed until Trigger Assembly is removed.



Remove 5mm threaded Plug for Hammer Assembly
Mark Plug at 12 o'clock position & count number of turns = 9 1/2



Remove Hammer Assembly



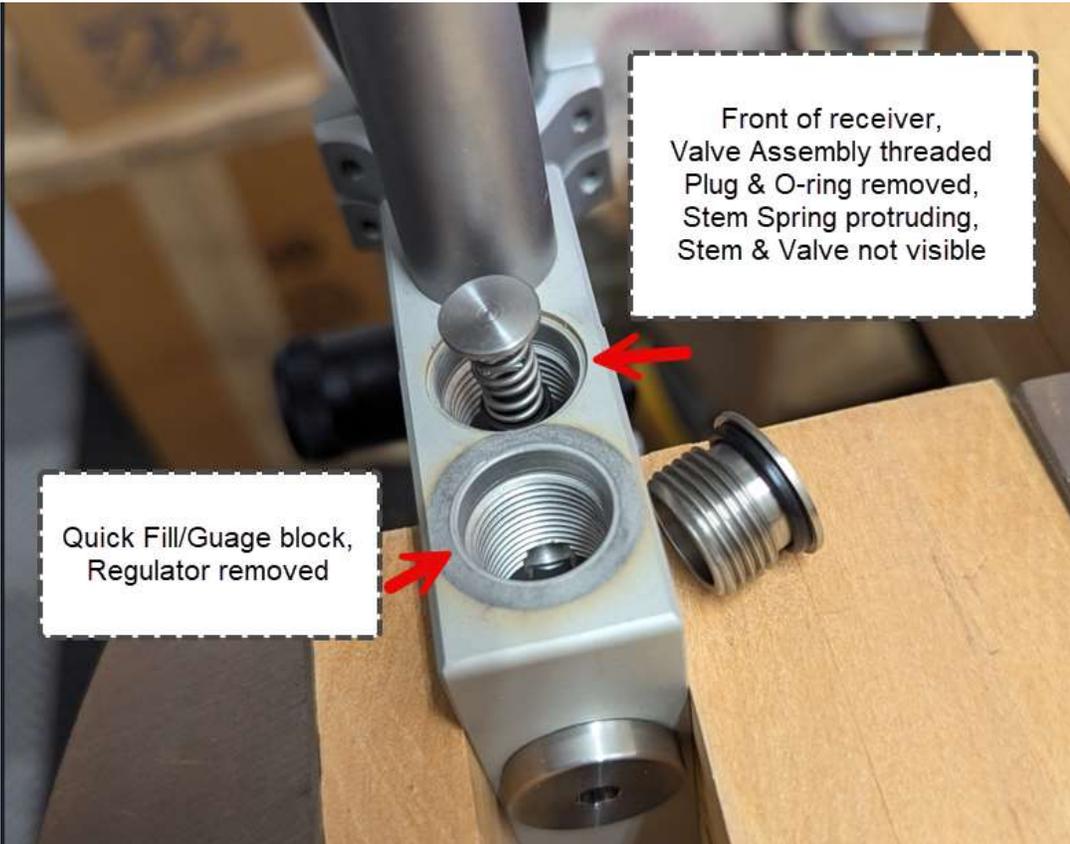
Hammer with residue on tip which contacts the valve Stem



Remove the Valve Assembly, threaded Cap & O-Ring should be hand tight

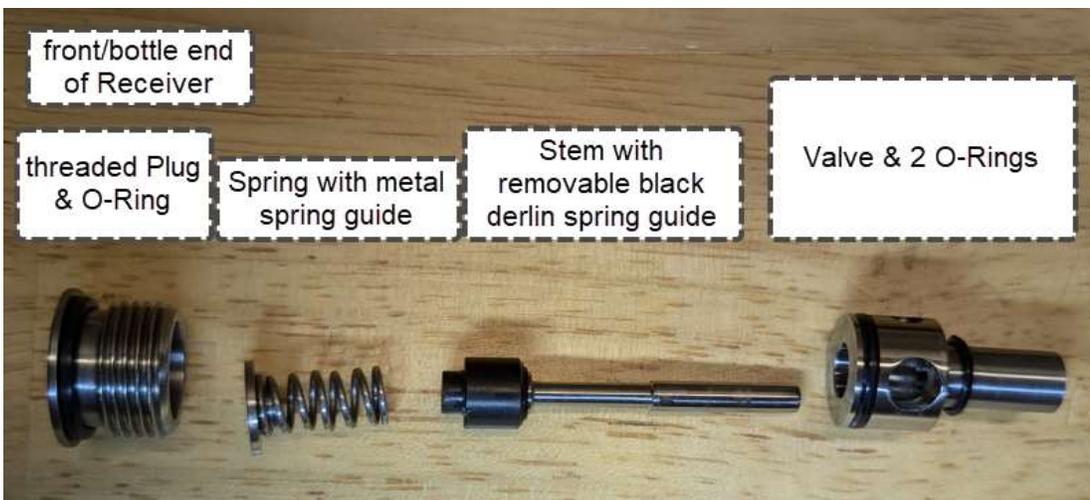
Front of receiver,
Valve Assembly threaded
Plug & O-ring removed,
Stem Spring protruding,
Stem & Valve not visible

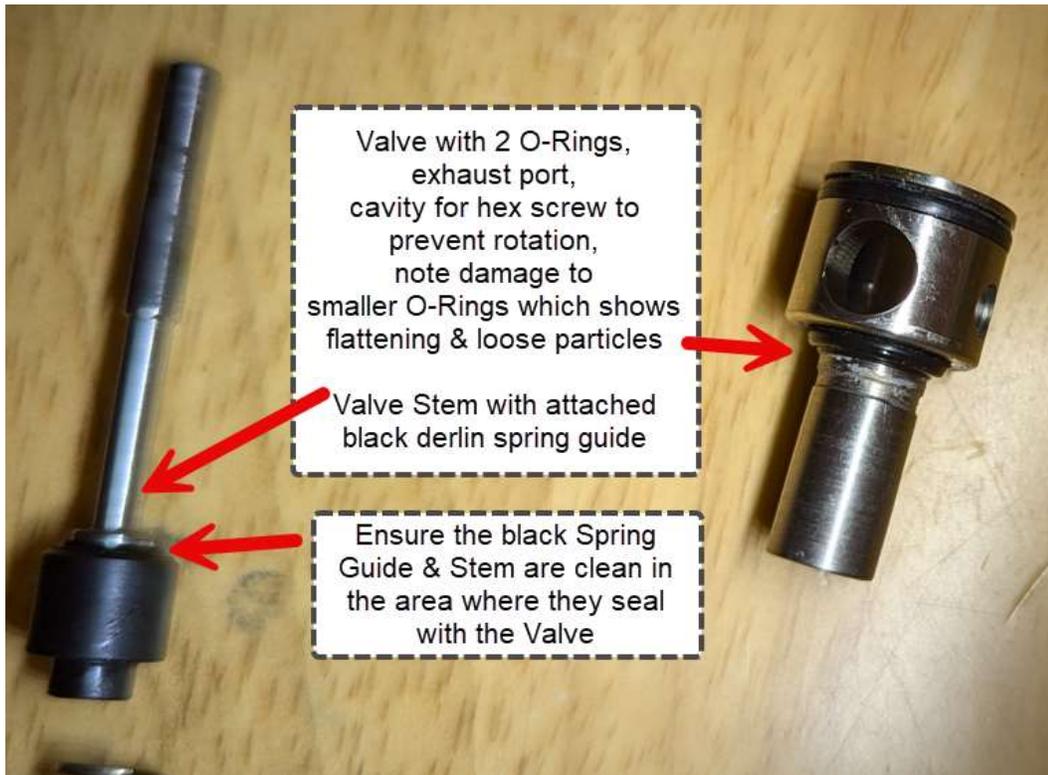
Quick Fill/Guage block,
Regulator removed





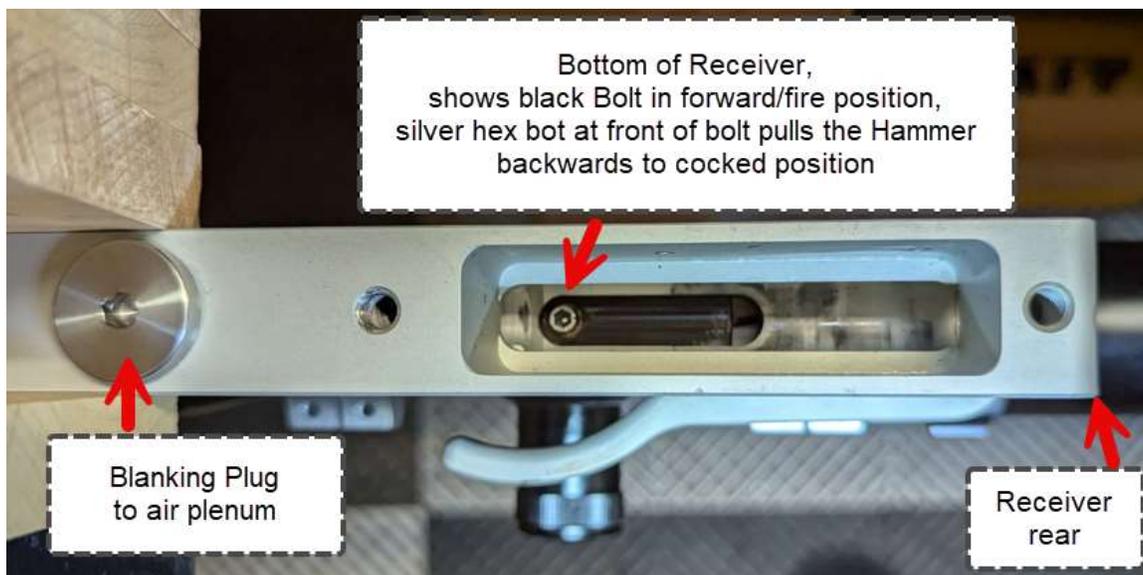
If Valve body does not fall out of receiver block, use a wooden dowel or Allen wrench to push out via the Hammer Assembly chamber.





- From rear of receiver block, use wood/Allen to carefully push the Valve Body & 2 O-rings out the front/barrel end
- Clean the receiver valve body chamber - alcohol
- Ballistol Multi-Purpose Oil & Spray
- Use disposable eye-shadow sponges (don't leave lint)
- Replace & Lube O-rings with silicone oil/grease
- Use plastic NonScratch O-Ring Pick Tool, avoid scratching grooves
- Thoben Rapid recommends DuPont (Dow Corning) Molykote 33 Medium Extreme Low Temperature Grease
- Put some white in bottom of Valve Body cavity (helps visibility to correctly align valve hole with receiver hole)

Receiver hole is for hex grub screw (prevents rotation of Valve Body)
Use Allen wrench inside the Valve body to insert & position so cavity for grub screw is visible through hole in side of receiver.



Remove Bolt

- Remove Cocking Dog (silver Allen bolt on bottom of bolt)
- Remove bolt handle
- Slide bolt out from rear of receiver

Disassemble Regulator

- 4 O-Rings
 - Brass disc - push-pin to open bottle, O-ring, remove with sturdy circlip pliers
- Core - 2 O-Rings
- Regulator body external - O-ring

Clean Everything - isopropyl alcohol, carburetor/brake cleaner

- No towels - lint causes leaks
- Clean the Receiver Valve body chamber, Hammer chamber, etc

Use plastic O-Ring Pick (avoid nick/scratch) to remove old O-Rings

Theoben Rapid Service Guide

<https://www.jimmiedeesairguns.com/guides/service-guides/theoben-rapid-mkii-service-guide/a-service-guide-for-the-theoben-rapid-mkii/>

- Recommends Dupont Molykote 33 Medium Extreme Low Temperature Grease for O-Rings
- Apply dab to thumb & index finger, rub O-Ring between fingers, don't over apply.

O-Rings to replace (minimum)

- Bottle Nick external 805108
- Regulator Body large 805062
- Valve threaded 'Blanking' Plug 805062
- Valve Body large 805056
- Valve Body small 805006

Protect O-Ring from damage when installing by temporarily placing rubber bands on metal threads

Reassembly Start

Clean Stem

Clean Valve body, Replace & Lube O-rings with Molykote grease

- Valve shallow hole/cavity is for grub screw (prevents rotation of Valve Body)
- Put some white in bottom (helps visibility to correctly align valve hole with receiver hole)

Insert Valve Body with Allen wrench inserted into the Valve body & align cavity with grub screw

- Valve body should not be lubricated, O-Ring grease is OK. it should be dry.

Ensure Valve is correctly located

Tighten grub screw

Insert Stem, Spring & Guide,

Insert Valve threaded Cap & O-ring, no need to over tighten as it is held in place by regulator



Bolt Assembly

- Lightly coat bolt with molybedenum grease
- Refit cocking Dog, screw through trigger cavity
 - Apply small drop of Loctite (pink 222), don't overtighten, jus slight nip
- Refit bolt handle

Clean Regulator, replace & lube O-rings

Hammer Assembly

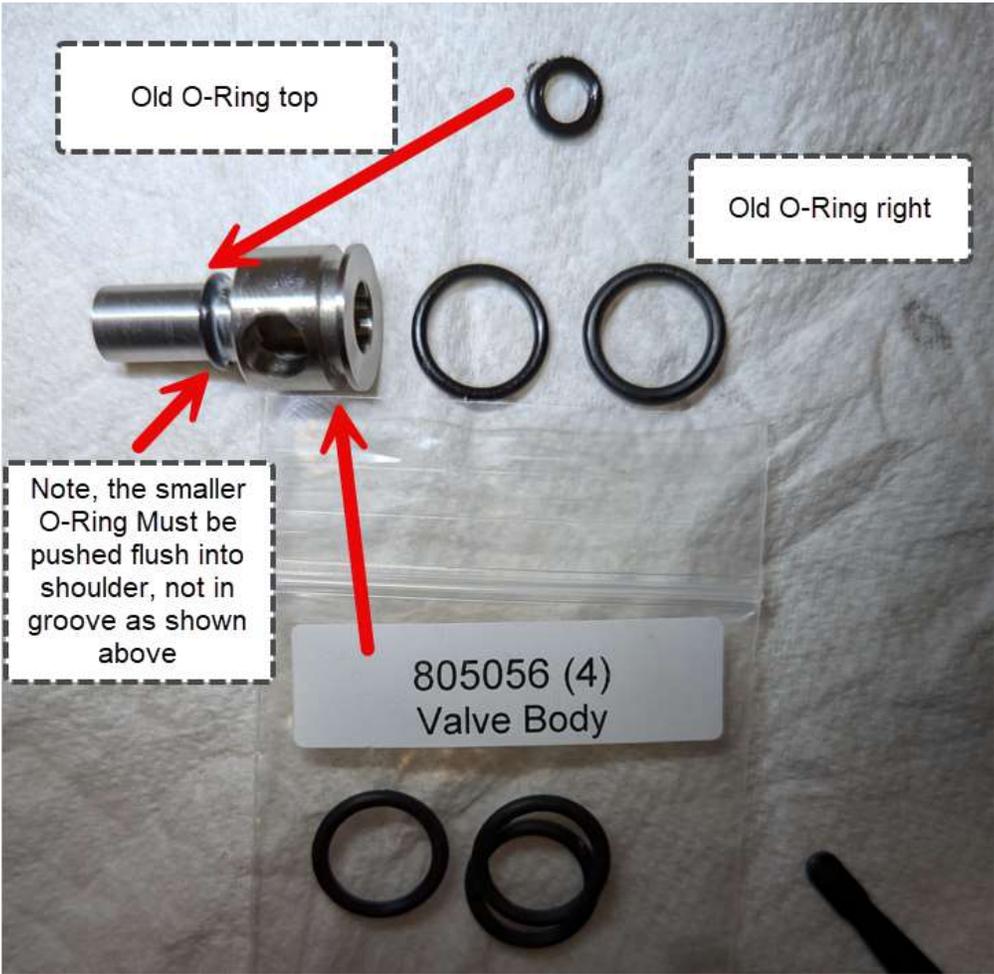
- Assembly dry, without grease or oil. Lubricant will cause variable drag, causes variation in air to pellet
- Hammer adjuster Cap (5 mm Allen) should not be tight, It should be 'loose'.

Trigger Assembly

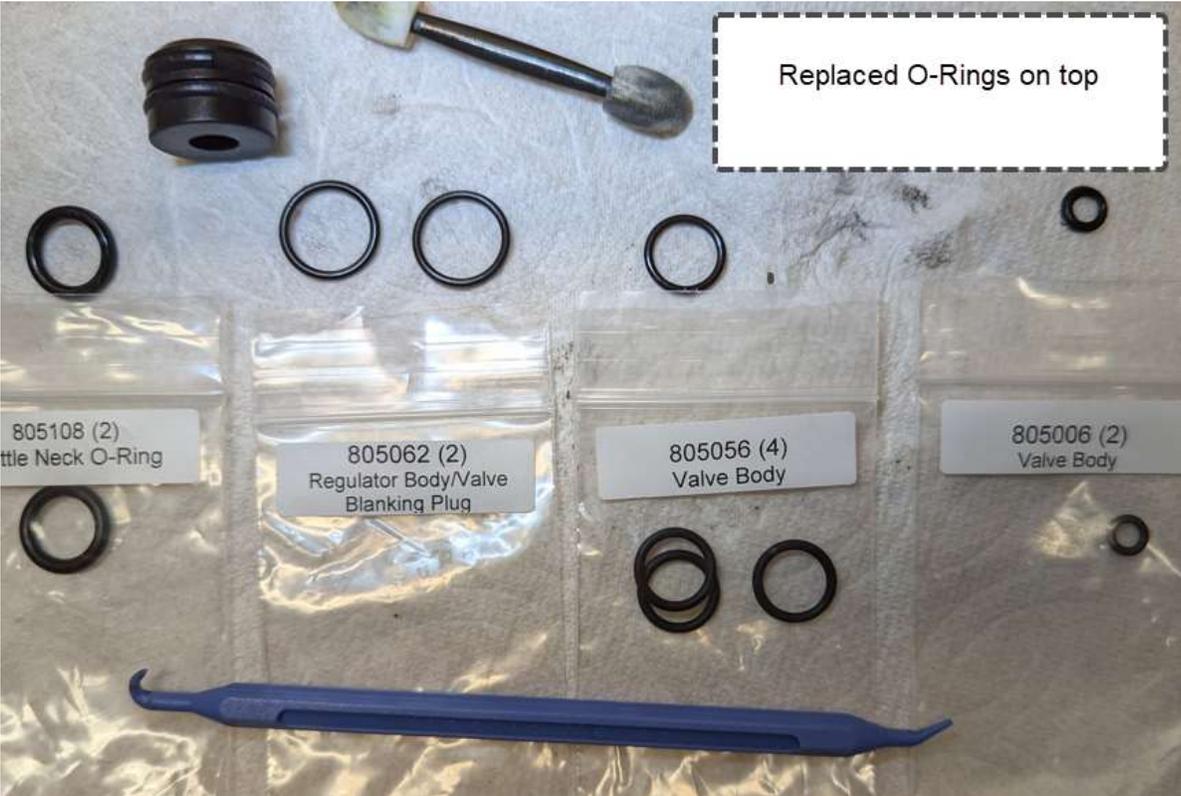
- Lube all trigger contact points with Ballistol Universal spray (includes some moly grease= metal to metal)
- Also Hammer inside & out (less is better)







8/1/2024 Summary of O-Rings replaced on RAW BM 500





Tools used: 5 mm Allen (blanking Plugs), plastic O-Ring Pick, hammer, punch (trigger pins), spanner wrench, hammer (regulator), eye-shadow sponge (clean), 5 mm Allen, needle nose pliers
 Not shown: 3/16 Allen (stock), 2.5 mm Allen (valve grub), alcohol (clean), vice

After reassembly, high flow of air was leaking out of barrel muzzle.

Realized there must be an open path from Bottle > Regulator > Valve > Barrel.

So disassembled Bottle, Regulator, Valve.

Found the small O-Ring on Valve was NOT pressed against the shoulder of bigger diameter part of Valve.

Not sure, but Valve may NOT have been positioned deep enough so the grub screw was in the correct spot/cavity.

Tried to reassemble, Valve but could not position so able to see grub cavity. The Hammer is pressing against valve. So...

Removed Trigger assembly, Removed Trigger Assembly.

Then able to correctly position Valve so able to see the partially drilled hole, thus able to correctly thread the Hex grub screw into the Valve cavity.

Repositioned Regulator & Bottle.

Air added to 120 BAR, had slight leak at Regulator.

Let sit for few hours.

No leak, fill up to 200 BAR (maximum recommended) . No leak.