REAPER GEN 11

OWNER'S MANUAL

WOLVERINE AIRSOFT

www.wolverineairsoft.com

Welcome to the
Wolverine Airsoft HPA Family!

Your REAPER HPA engine kit comes with following contents in the package. Please ensure that all components of the package are present and undamaged.

All packages contain:

REAPER HPA Engine
Grip Line
REAPER patch
O-Ring Kit

These kits also contain:

Spartan Kit

Spartan electronics
Buffer tube adapter

M249 Kit

Premium M249 FCU
M249 wiring harness

V2 Premium Kit

Premium FCU
V2 trigger board
14" wiring harness
Buffer tube adapter

V2 Electromechanical

Buffer tube adapter
EM wiring harness

V3 Premium Kit

Premium FCU
V3 trigger board
12" wiring harness

V3 Electromechanical

EM wiring harness

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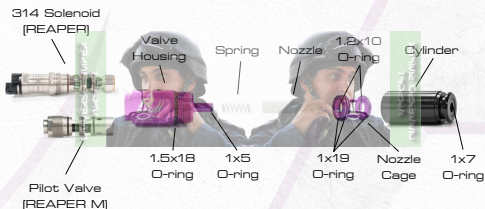## Don't Forget to Register Your Warranty!

Your REAPER HPA Engine is backed by Wolverine Airsoft's limited warranty. Scan the QR code or visit www.wolverineairsoft.com/warranty to read our full warranty and register your HYDRA HPA engine.

Getting Started

Your REAPER HPA engine is a precise instrument containing many individual components. Before you begin, please see the diagram below and familiarize yourself with each component.

314 Solenoid
[REAPER]

Valve Housing

Spring

Nozzle

1.8x10 O-ring

Cylinder

Pilot Valve
[REAPER M]

1.5x18 O-ring

1x5 O-ring

1x19 O-ring

Nozzle Cage

1x7 O-ring

Specifications

Pressure Operation Range: 40-140 PSI
REAPER Voltage Operation Range: 6-8V
Muzzle Energy: .5J-2J [Setup Dependant]
ROF: 5-30 RPS

Note: Never exceed the specified operating pressure of 140 PSI. Doing so may damage the product.

Nozzle Replacement

Our standard REAPER HPA kits come standard nozzles that fit most replicas. However, your replica may require a different nozzle to be installed. Please see our Compatibility Guide at www.wolverineairsoft.com/compatibility.

You can easily change the nozzle by first removing the cylinder and then the spring and nozzle. Spread a small amount of lubricant along the length of the nozzle when re-assembling. Please see the Maintenance chapter for more detailed instructions.

Installation

The process of installing the REAPER HPA engine can vary greatly depending on your replica. To make it easier, we have a variety of videos available online specific to a common gun platforms.

Please scan the QR code or visit the knowledgebase at www.wolverineairsoft.com/knowledgebase

Tuning

[Not applicable to REAPER M]

Tuning refers to the process of electronically adjusting the engine's dwell for maximum performance and efficient air usage.

Dwell is a measurement of the length of time that the solenoid valve is opened, allowing air to flow from the air tank to propel the BB. The REAPER requires a longer dwell than our other engines so that the nozzle has enough time to cycle completely and load another BB.

Please refer to the Spartan Electronics or Premium FCU owner's manuals at www.wolverineairsoft.com/documentation for detailed tuning instructions.

Maintenance

Regular maintenance on the REAPER HPA engine should be performed every 25-50k rounds depending on the conditions it is being used in. The dustier and dirtier the conditions, the more frequently it should be serviced.

Items needed:

- O-ring compatible lubricant. [We recommend TechT GunSav]

Begin by disassembling your REAPER engine by unscrewing the two halves counterclockwise.

Next, disassemble the cylinder assembly by pushing the nozzle towards the back of the cylinder.

Remove the nozzle cage from the cylinder. You may need to tap the cylinder on your hand or a hard surface to break the cage free from the cylinder.
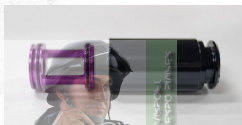
Lubricate all five O-rings on the nozzle cage. There are three 1x19mm O-rings on the outside of the cage and two 1.2x10mm O-rings on the inside.

Lubricate the base of the nozzle.

Lubricate the 1x5mm O-ring on the shaft of the valve housing as well as the 1.5x18mm O-ring below the threads.

Lubricate the 1x7mm O-ring inside the bushing in the front of the cylinder.

Your REAPER is ready to reassemble. Begin by inserting the cage into the rear of the cylinder. Make sure the 1x19mm O-ring is to the rear of the cylinder.

Next, insert the nozzle and the spring into the cage.

Finally, align the nozzle with valve housing post and push the valve body into the cylinder. Screw the two halves of the unit back together clockwise.

Important!

The cylinder plugs are part of the manufacturing process and are not adjustable or removable. Never attempt to remove or adjust the cylinder plugs. Doing so will cause leaking and engine malfunction.

Do not touch!

Do not touch!

Troubleshooting

[Not applicable to REAPER M]

Symptom	Possible Solution
Gun always fires in semi regardless of selector switch position	The selector plate is not engaging the selector switch and will need material added to permit proper operation. Contact WA or a qualified technician for assistance. -The burst setting is set to semi-auto
Gun always fires in burst regardless of selector position	-The selector plate is always engaging the selector switch and will need material removed to permit proper operation. Contact WA or qualified tech for assistance
In burst the gun fires one BB and then continues to cycle/blow air down the barrel but no bbs fire	-Rate of Fire [ROF] is set too high. Reduce ROF to allow the action time to cycle and load bbs.
Inconsistent/Low velocity	-Dwell is set too low, -Damaged O-rings -Air nozzle is too short and not providing adequte seal at the hop up bucking. Contact WA or qualified tech for help.
The valve cycles/releases burst of air but no bbs fire	-Non-feeding magazine -Air nozzle is too long -Dwell is set too low Contact WA or qualified technician for assistance
Nothing happens when trigger is pulled	-Dead battery -Trigger is not properly engaging the trigger switch. Open gearbox and manually press the trigger switch to see if solenoid fires. If not, contact WA or qualified tech for help.
Poor air efficiency	-Damaged O-rings -Air nozzle is too short and not sealing at the bucking -System air leak, check for audible signs of leak point.

Need professional help?

To find a retailer close to you visit:
www.wolverineairsoft.com/dealers

www.wolverineairsoft.com