

Airsoft Piston Heads: Ported Piston Head

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Airsoft AEG Piston Head

An airsoft AEG piston head is attached to the piston (screwed in) and it is where the rubber O-ring mounts to. The O-ring is vital in sealing the cylinder during an airsoft AEG's firing cycle (when the piston is released from the sector gear, which in turn quickly releases the spring from its compressed state and quickly pushes the piston forward thus compressing the air inside the cylinder, the compressed air is transferred to the airsoft BB (which is held in place by the hop rubber) through the nozzle of the cylinder head. This all happens in a matter of milliseconds).

For stock to mild airsoft AEG set-ups/upgrades a ported stock piston head (which is usually made of polycarbonate) is sufficient enough to do the job.

What is a Ported Piston Head?

A ported piston head basically has the same dimensions of the stock unit but has holes/ports on the front/top surface. Available aftermarket units are made from different materials such as aluminum or polycarbonate and have different number and sizes of ports/holes though they are equipped with bearings that prevent the spring from twisting. But they basically do the same thing, which is to prevent vacuum inside the cylinder (since the cylinder is "supposedly" airtight and it's capable of compression during its forward motion, it is most likely capable of creating a vacuum and suction during its backward motion. Very much like a syringe) when the piston pulls back and compresses the spring for another cycle. The ports/holes act as pressure relief valves and allow air to pass through while the piston retracts, hence no vacuum.

A stock piston head can be ported and do the same job without the added cost (as long as you do not exceed the M130/SP130 spring power rating, anything above that, I would suggest getting the ones that have bearings for a longer spring lifespan). Using just the basic tools (like a hand drill) would be enough to port your own piston.

This a non-FPS upgrade meaning that this wouldn't affect your FPS rating. In concept it would slightly (or almost negligible) increase your ROF (rate of fire, by shaving of a few milliseconds during cycle) since it prevents vacuum from slowing down the piston and lessens the stress on the gear set during it's cycle, less stress on the components means less wear on these moving parts.