Hanwha
1, Changgyo-Dong, Chung-Gu, Seoul, Korea, 100-797 Website : exp.hanwha.co.kr

Cartridge, 40MM HEDP HW212A1

◈ Use

This cartridge is a high explosive, dual purpose, impact type round designed to penetrate at least 3inch of mild steel at 0 angle of obliquity and inflict personnel casualties in the target area. It is fired from 40MM Machine Gun MK19 Mod 3 or K4.

◈ Description

This cartridge is a fixed round of ammunition with an internally embossed steel projectile body containing a high explosive charge of Comp A5 and a copper liner. A K541 PIBD fuze, integral with the ogive and containing a spit-back charge, is threaded into the loaded body forming the complete projectile. An Cartridge Case Assembly is crimped to the projectile. The case is a hollow, bichambered aluminum cylinder with vents connecting the chambers. The propellant chamber, which contains the propelling charge, is sealed at the rear by a base plug. A percussion primer is crimped into the center opening in the base plug. The propellant chamber acts as a high-pressure chamber, and the forward hollow cavity in the case acts as a low-pressure chamber.

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◈ Functioning

The weapon firing pin strikes the percussion primer igniting the propelling charge. Pressure, generated by the burning propellant in the high-pressure chamber, forces the expanding gases through the vent holes into the low pressure chamber, and propels the projectile forward. The rotating band around the projectile forward. The rotating band around the projectile engages the rifling in the launcher tube, imparting a spin of 12,000 rpm to the projectile. The expanding gases in the low-pressure chamber force the projectile through the barrel attaining a muzzle velocity of 242 meters per second. Prior to firing, the detonator in the fuze rotor is held out of line by the position of the set-back pin against the rotor and gear assembly. Upon firing, setback force frees the rotor from the pin. The spin of the projectile causes the safety spring assembly to disengage from the rotor and gear assembly. The detonator then begins to move toward the armed position under the influence of centrifugal force on the eccentrically located rotor. The movement of the rotor and gear assembly is resisted by an escapement mechanism, providing the required time delay in the arming of the fuze. The detonator reaches the armed position when the projectile has traveled a distance of 18 to 40 meters from the launcher. Upon impact with the target, the firing pin is driven into the detonator. The effect of the detonator initiates the spit-back charge producing a jet which in turn initiates the main charge. Detonation of the main charge provides both the armor piercing effect of the shaped charge and fragmentation of the steel body.

◈ Tabulated Data

Complete round :

Type ---------- HEDP (high explosive, dual purpose)
Weight ---------- Approx. 350gr
Length ---------- Approx. 112mm
Weapons used with ----- 40MM Automatic machine gun MK19 Mod 3 or K4

Projectile :

Ogive material ---------- Aluminum
Body material ---------- Cold-drawn steel
Color ---------- Olive drab w/yellow markings and yellow ogive
Filler and weight -------- Comp-A5, 32gr

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Fuze ---------- PIBD, K541
Spit-back charge -------- RDX, 310mgr

Propelling Charge :
Cartridge case ---------- KM169
Propellant ---------- KM2
Primer ---------- Percussion, FED215

Link ---------- KM16A2

Performance :
Max. range ---------- 2,200 m
Effective range ---------- 1,500 m
Effective firing rate ----- 300 rds/min
Muzzle Velocity -------- 242 mps
Arming distance -------- 18 to 40m
Penetration ---------- 3inch(or 75mm) of steel plate

Temperature Limits :
Firing :
Low limit ---------- -53.8℃
Upper limit ---------- 52.0℃
Storage :
Low limit ---------- -53.8℃
Upper limit ---------- 73.9℃

Packing :
48 rounds in linked belt per metal container

Packing Box :
Weight ---------- 29 kg
Dimensions ---------- 490 X 214 X 370 mm

Storage and shipping data :
UN serial number ---------- 0006
Hazard class/division and storage compatibility group ---- 1.1E