

What is the V4 Series of Adapter Plates and Why?

The CHPWS line of adapter plates has evolved over the past five years because the GLOCK OEM plate is the weakest link in the MOS System.

The new V4 plates mainly address the mounting hardware issue. All V4 plates feature two 416 Stainless steel T-Nuts that are used to mount the MRDS to the plate. The T-Nuts are press fit into the bottom of the plate during installation by hand giving you the ability to replace not only the screws but the T-Nuts if you cross thread it or strip them. The issue in the past has been users over torquing the mounting screws and we had to replace the entire plate, not just the screws. This led to requests from several well-known MRDS Instructors and agencies for a solution. The suggested solution was a new plate made from steel, however, that would have solved one problem but if a user stripped a hole in a steel plate, the entire plate would still need to be replaced. We determined that a well fit plate with properly design recoil posts and with 4-40 screws offering 6 to 7 threads of engagement is still far superior to a 6-32 with 2 to 3 threads of engagement.

Mounting Hardware:

All V4 plates feature 18-8 stainless steel Torx head screws and 416 Stainless steel T-Nuts.

Modularity:

The V4 design features a removable patent pending T-Nut design. In the past the entire plate was made from hard anodized aluminum, however, this presented a problem if a user applied excessive torque during installation and stripped the threaded hole. If this happened, the entire plate was ruined and had to be replaced at the cost of \$65. With the new T-Nut design, if a threaded post was stripped or damaged, the plate is still serviceable and a replacement set of T-Nuts costs less than \$4.00.

Tolerances and Design Features:

Our roots are in Precision Bolt guns where holding and maintaining tight tolerances repeatedly are critical for producing quality parts and rifles. We inspect every single part for fitment before it's sent to surface finish. The CHPWS plates have always been famous for filling in the gaps, however, that is mainly for aesthetics. The recoil posts do all the work of keeping the red dot in place and retaining zero when it's removed from the plate and re-installed. A Trijicon RMR has two recoil post holes on the underside of the RMR that measure .153" in diameter. Current industry competitors only use two recoil posts on the plate designs and the average size of their posts range from .145" to .149". The CHPWS V4 plate features at least four (4) recoil posts that all average .001" to .002" smaller than the mating holes on the red dot. The V4 T-Nut is the added feature that incorporates the additional set of Recoil Posts. These additional set of recoil posts also eliminates any shear force on the mounting screws since the lateral forces during recoil are imparted into the T-Post instead of the threaded body of the mounting screws.

Thread Engagement:

Thread engagement is the most critical feature in retaining a red dot on a pistol. Most current plates on the market utilize a 6-32 screw size with a plate thickness of .100". Standard engineering best practices from within the field of Joints and Fasteners within the field of Mechanical Engineering state "The length of thread engagement by a steel threaded fastener into in a steel nut member should be at least 1x to 1.5x the full diameter of the threaded fastener to ensure a proper joint strength" (i.e. if the screw is ¼" diameter, the thread engagement needs to be a minimum of .250" to .375"). A 6-32 screw has a diameter of .132" and should have a minimum of .132" or more of thread engagement for proper retention.

Using the engineering principles from above, the V4 4-40 screw needs a minimum of .095" and preferably .143" of thread engagement to be secure. Using the V4 design, it allows up to .180" of thread engagement. In the environment of pistol mounted red dots where shock, vibe, and G-Forces are extremely harsh, MORE IS BETTER!

The V4 threaded posts with 4-40 screw design happens to be the same mechanical mounting principle patented by ZEV Technologies to mount red dots directly to slides. CHPWS has a licensing agreement to use the ZEV IP on direct milled slide cuts. CHPWS has applied for and is awaiting patent approval on threaded posts on mounting plates.

Plate Materials:

All V4 plates are made from aircraft grade 6061 aluminum. All parts are then finished to MIL SPEC Type III Hard Anodize.

Other mounting Plate Issues:

All other mounting plates suffer from one or both of the following issues:
Lack of thread engagement
Extremely loose tolerances
Lost cost / Low Quality materials

GLOCK Plates are MIM parts. The manufacturing process is similar to making diecast matchbox cars. It's a great process for toys but not precision parts. About 20% of agencies we work with have banned the use of OEM plates.

Any other company that has made a better OEM plate still suffers from lack of thread engagement and the only way to improve that issue is through the use of our patent pending T-Post design.

Partnerships and Joint Ventures:

CHPWS has become the defacto "Go To" company for design and manufacturing of mounting plates for red dots for Optics Companies, Instructors, Local, State, Federal Agencies, and at least 15 of the best Red Dot Instructors in the US.

We currently design, manufacturer or consult to the following industry partners:

GLOCK
Walther
Trijicon
Holosun
Leupold
Vortex
Browe
Aimpoint
SIG Sauer

We are currently "Approved For Duty Use" and or in use by over 800 Agencies to include:

FBI HRT
ATF Tactical Teams
DHS - Several Agencies
4 SEAL Teams
6 US Army SF Units
2 US Airforce SF Units
USMS (Marshals Service)
USAM (Air Marshals)
US Courts
US Forest Service
TX DPS - Texas Rangers
Houston PD
LAPD - CA
LA County S.O.
Orange County S.O. (CA)
East Rutherford PD
LA County S.O. (CA)
Santa Rosa County S.O. (FL)
Tarrant County S.O. (TX)
Riverside County S.O (CA)
Phoenix PD/SWAT (AZ)
Utah Highway Patrol
Minneapolis PD/SWAT
Maryland-National Capital Park Police
Denver PD
Palm Beach County S.O. SWAT

The top ten list of Red Dot instructors is a subjective list, however, at least ten of the top ten recommend the V4 plate:

Scott Jedlinski from Modern Samurai Project
Matt Hoffman Principal Firearms Instructor for FBI Assault Firearms Program

Steve Fisher Sentinel Concepts
Aaron Cowan from Sage Dynamics
Jarrod Reston from Reston Group
Bill Blowers from Tap Rack Tactical
Brandon Wright from Wright Shooting Solutions
Jim Dexter from Tactically Sound
Ben from Boresight Solutions
Alex from Ridgeline Defense
Hilton Yam from 10-8 Performance
Nick from GCS Training
Rick from Achilles Heal Tactical
ALL GLOCK Academy Instructors run the CHPWS V3 (older version) or the new V4
version
All GLOCK Pistol Team Shooters