

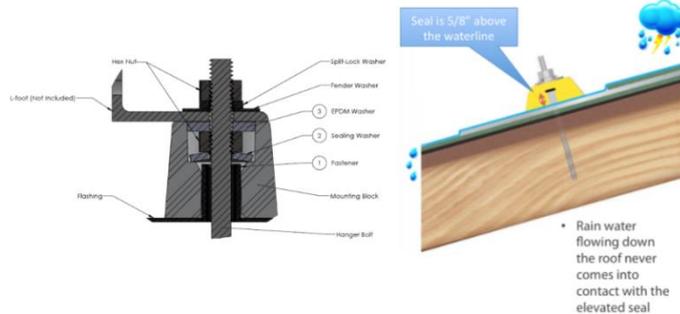
Chris & Brenda's Solar Water Heating System

Notes on Collector Mounting



Having selected AET brand commercial collectors for our system, the next step was to figure out how to mount them. Not wanting ground mounted collectors due to the visual impact, we decided to place them on the roof of the garage with a perpendicular azimuth of 139 degrees (SE) with a pitch of 43 degrees. Our latitude is 36.83 degrees, so after studying the de-rates due to azimuth and elevation, we decided that fixed mount on the roof plane would be "close enough".

There are a myriad of options available for roof mounting solar gear. The first step was to select a method of attachment to the roof structure itself. After much internet research, and with cost as one of the governing factors, I selected the Quick Mount PV Classic mounts purchased through www.altestore.com made by Quick Mount PV (www.quickmountpv.com).

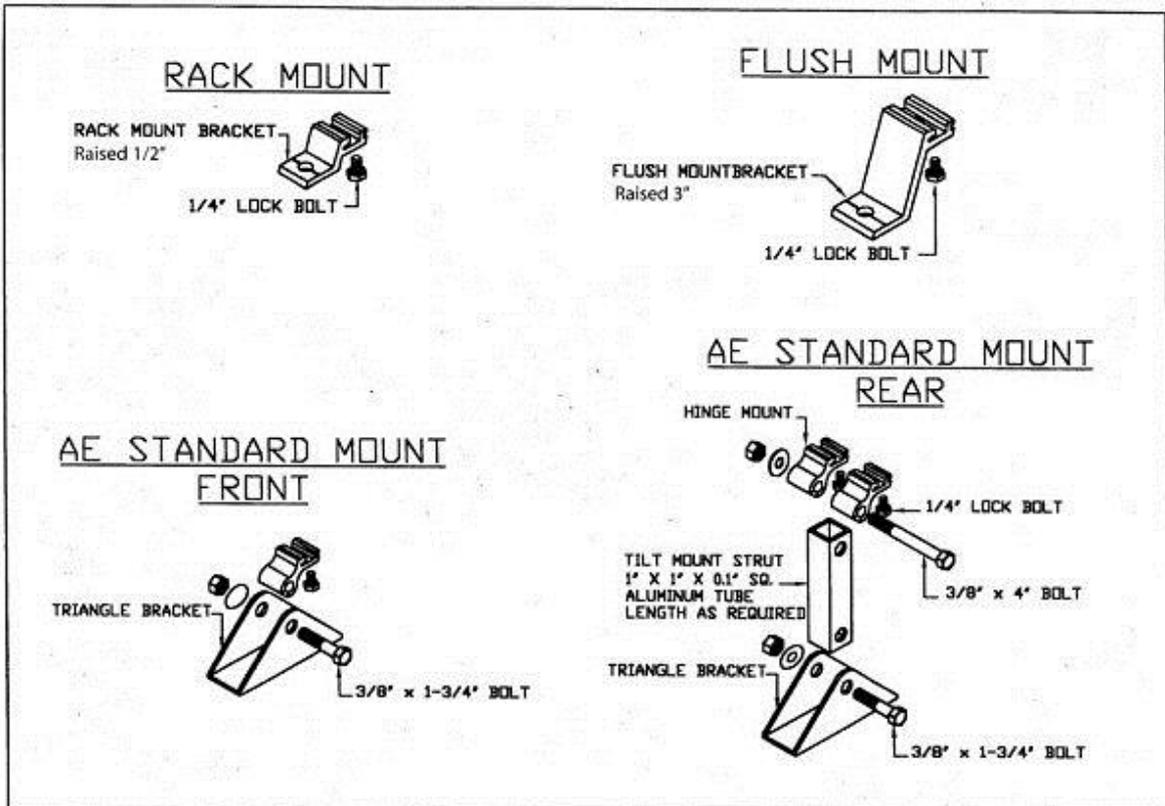


These mounts feature a heavy gauge aluminium plate with integrated mounting block with a very well thought out sealing strategy. The website has very nice instructional videos on installing the mounts and the written instructions are very good and also illustrated with photos. Because we were having the roof redone, we had the roofers install these mounts as they were shingling and thus Rob (the roofer's flashing specialist) was able to almost completely hide the flashing plate without compromising the sealing.



AET (<http://www.aetsolar.com>) offers three options for mount brackets for their line of collectors. These brackets are universal and fit both the AE Series and MSC Series flat plate collectors. The Standard mount (front and back) are designed to be used when the collector pitch will be different than the roof pitch. Each of the front and back mounts features an axial pivot to accommodate various different angles of pitch. The front bracket bolts directly to the roof mount and the panel. The back mount has an upper and lower unit with a leg of various length between.

AE Series Mounting Hardware



The Rack Mount (AE-RM) is mainly designed to connect an AE collector to a U channel type rack. I purchased a set of these mounts to be used to make the pipe supports for the plumbing, but they also came in quite handy for the installation.



The Flush Mount (AE-FM) brackets are designed for direct roof mounting and provide about 3-4 inches of clearance between the collector back and the roof surface so that leaves and such can slide down the roof surface and not get jammed up under the panel. These are the mounts we used for our AE-40 collectors.



If I had it to do all over again, I would still use the Quick Mount PVs, but I would set them in a 3 x 3 grid, run U Channel across the QMPVs in 3 horizontal runs, and then mount the collectors to the U Channel "rails" using the AE-RM brackets. In hindsight, this would have made setting the proper drainback pitch as well as aligning the couplings much easier – though with careful planning, measuring and execution, the way we did it was not that difficult.