



AWE RING MOUNTS

Installation Instructions



Introduction

This document is intended to help the user safely install the ring mounts and scope onto your rifle and help you understand the need for AWE ring mounts. There are two main topics discussed below, which are setting up the windage alignment of your scope to be centralized and setting up the MOA offset bushes to allow for better or extended MOA adjustment.

What's in the box

A new box set of SUS-TAC AWE Rings contains the following items:

- 2 x SUS-TAC AWE Ring Mounts
- 2 x MOA Split bushes
- 8 x Ring mount cap screws
- 4 x Side clamps
- 4 x Side clamp hex nuts
- 1 x 3mm Allen Key

Tools Required

The following tools are recommended for a successful and accurate installation of the SUS-TAC AWE Rings:

- Rifle bench rest (or otherwise bi-pod and sand bags)
- Recticle Levelling System (Wheeler style)
- Laser Bore Sight
- Rifle Scope in/lb Torque Wrench
- 10mm Socket (1/4" drive)
- 3mm Allen key (Supplied)
- Drop/plumb line



Safety

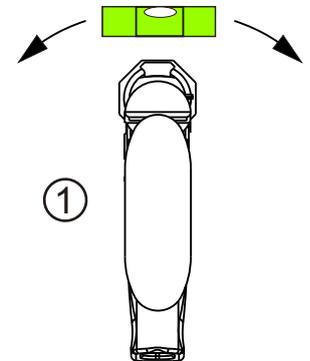
- Make sure the rifle is safe before handling.
- Do not the point laser beam into your or any other persons eyes.
- Remove all unnecessary equipment from gun before use. eg. suppressors and brakes.
- Make sure the laser bore sight is removed and bore of rifle is clear before shooting.

Initial Alignment

***** Ensure weapon is safe before continuing. *****

1) Firstly, rotational alignment of the rifle needs to be determined using the following steps:

- Secure the rifle into a suitable bench rest, sandbags or holder of your choice.
- Point the rifle in a direction that allows for the laser bore sight's dot to be projected onto a smooth surface. This should be aimed over a moderate distance to allow for the scope to be able to focus on the surface where the dot is projected.
- Place the first temporary bubble level sideways on a flat section of the action and rotate the rifle until it is level. Diagram 2.
- While the rifle is level, clamp the second permanent bubble level near the muzzle and adjust it to correspond with the first bubble level. This calibrates the permanent bubble level to correctly represent the rifles true orientation for the remainder of the installation process. Diagram 3.
- Lastly, remove the first temporary bubble level from the action.



2) For informational purposes, visually check if the picatinny rail is parallel or offset to the action (looking down from above the rifle as per Diagram 1 below).

This error is fairly common on rifles and can cause parallax errors at different distances down range. If your rifle is suffering from this, it can be corrected with the windage adjustment with the AWE rings.

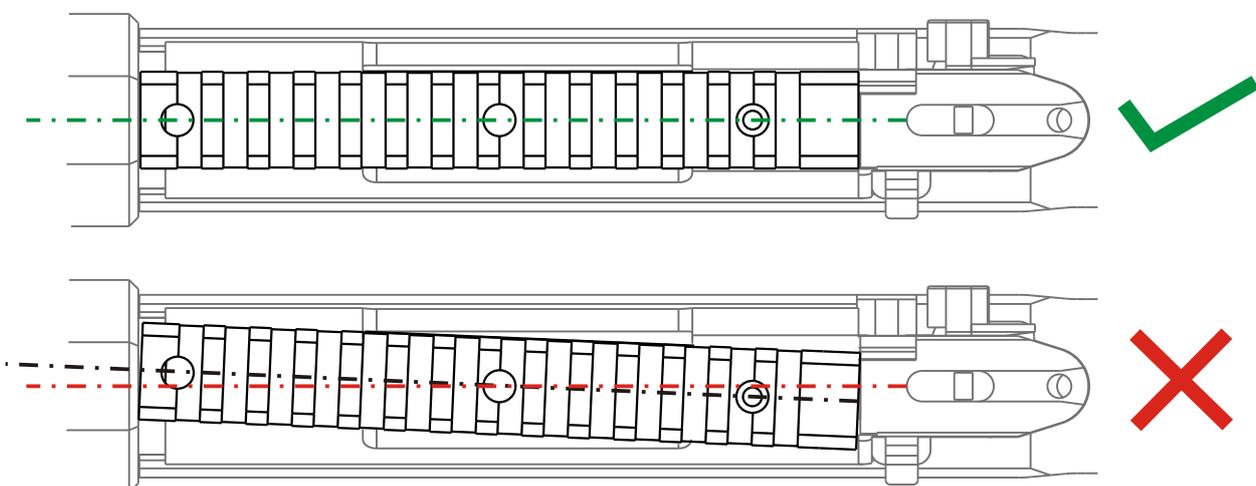


Diagram 1



Ring Base Placement

3) To ensure correct placement of the ring mounts and scope, the following steps need to be performed:

- All polarity grooves in the upper and lower ring mounts must face towards the muzzle. The MOA bush locking screw must also face to the left. For right hand rifles the opposite is true.
- Fit ring bases finger tight to picatinny rail at 120mm centres (Diagram 2) so as to ensure the correct MOA values stated on the bushes are obtained. A different spacing here will cause the MOA offsets to be different to the stated values. This difference can be calculated to get the correct MOA values.
- Place the two rings on the picatinny rail in a position that places the scope eyepiece in the desired eye relief position. Also take into account to leave enough space to adjust the scope's parallax and windage settings.

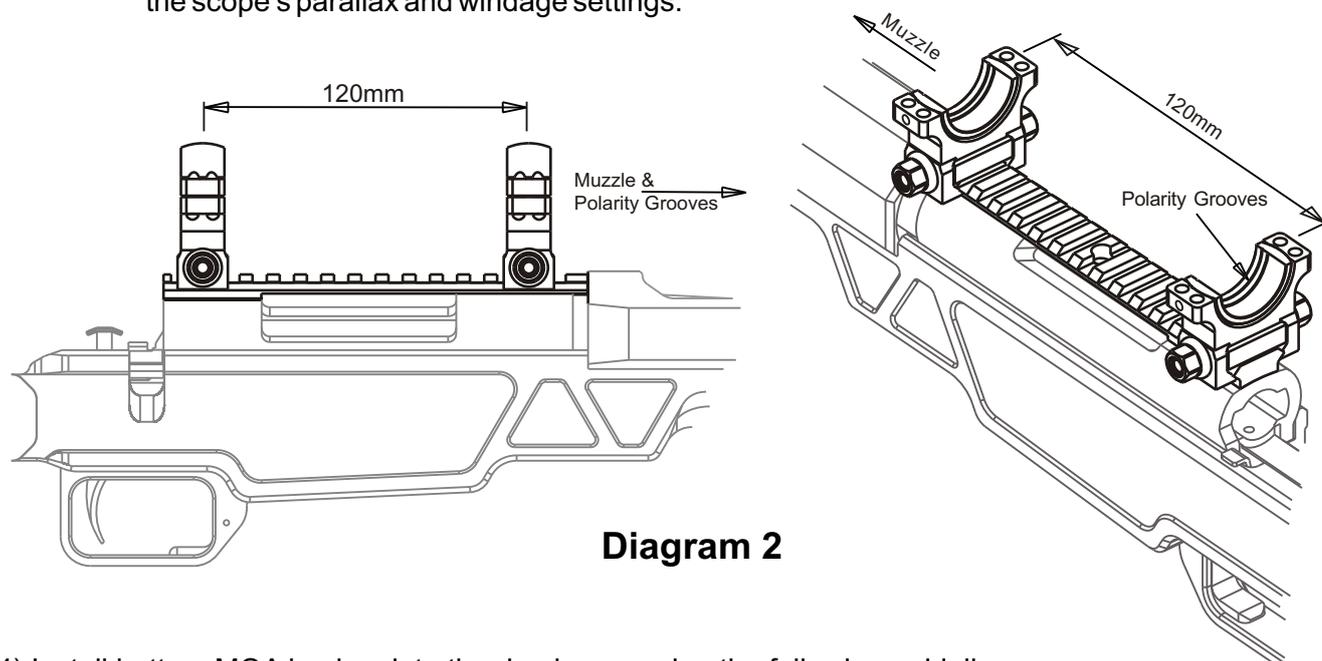


Diagram 2

4) Install bottom MOA bushes into the ring bases using the following guidelines:

- A single ring mount uses a top and bottom MOA bush. Each MOA bush set will always contain a +MOA and -MOA pair, unless you purchased a 00 MOA bush set then both bushes will state 00 MOA. These bushes are supplied as a matching pair. Each top and bottom half must remain a matched pair at all times, and must not be used with a different half from another pair. Mismatching halves can cause damage to your scope during final assembly.
- The most common use of MOA bushes is to add negative MOA to the scope for long range shooting. To achieve a negative MOA elevation offset, the rear +/- MOA bush set will need to be installed with the positive bush in the base of the rear mount and a front +/- MOA bush set installed with the negative bush in the base of the front mount. This tilts the scope with the objective down with the desired negative MOA offset.
- Each of the 2 Ring Mounts will always use one +MOA and one -MOA bush. When using 00 MOA bushes, both bushes will state 00 MOA.
- Never use bush halves with differing MOA values in a single ring mount. For example, do not use a 10 MOA with a 20 MOA bush in a single ring mount.
- To achieve the required MOA offset might require a different MOA bush set value to be installed in the front ring mount to the rear ring mount. For example, a 10 MOA set can be installed in the rear ring mount and a 20 MOA ring set installed in the front ring mount to give the user a total of 30 MOA elevation offset added to the scope.
- Please see Table 5 on the following page for different MOA combinations.



Table 5

MOA Value	Front Ring		Rear Ring	
	Base	Top/Cap	Base	Top/Cap
0 MOA	0	0	0	0
-10 MOA	-10	+10	0	0
-20 MOA <small>* NOTE 1</small>	-20	+20	0	0
	-10	+10	+10	-10
-30 MOA	-20	+20	+10	-10
-40 MOA	-20	+20	+20	-20

* **NOTE 1:** this MOA option has two methods to get the required



Scope Installation

5) Install scope into ring bases using the following guidelines:

- Loosen the bottom base hex nuts “B” and centralize the bottom rings to the picatinny rail. See diagram 4.
- Carefully place scope in the bottom ring halves.

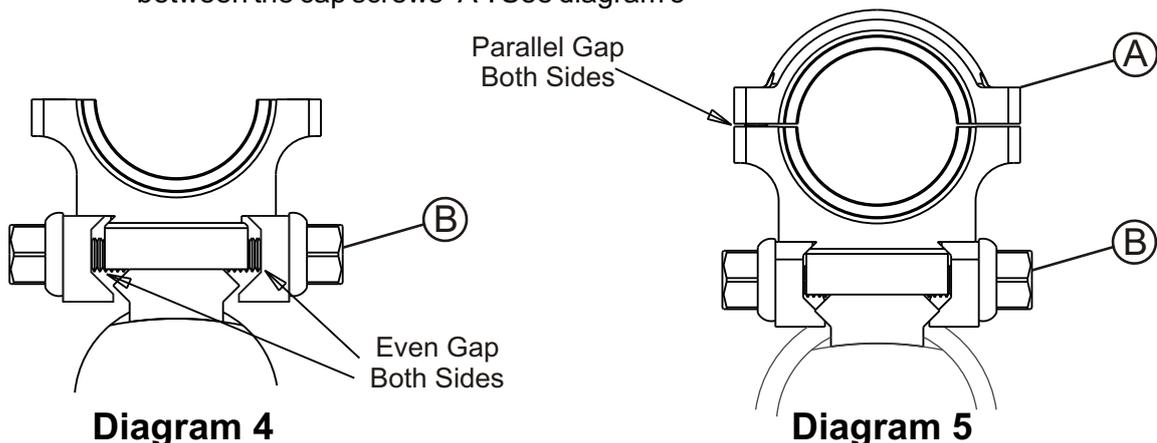
NOTE: Scope must drop in and have full contact with the bottom bushes.

- Place top bushes and ring caps on top of the scope. Ensure that the polarity lines are facing towards the muzzle.

NOTE: The scope must rotate freely within the bushes.

- Lightly finger tighten the cap screws “A” using the 3mm Allen key.

NOTE: Check for equal gaps between the top ring caps and bottom ring bases while tightening. Equal gaps are important to provide even load distribution between the cap screws “A”. See diagram 5





6) Scope vertical reticle alignment is achieved using the following guidelines:

- Install plumbline a couple of meters from the front of the barrel. It must be clearly visible through the scope on the lowest magnification.

NOTE: Ensure that the front bubble level and rifle are still aligned horizontally during this process.

- Centralize the scope reticle's windage adjustment before continuing.
- Look through the scope and gently rotate the scope body until the vertical reticle is aligned parallel to the plumb line. See diagram 6 below.

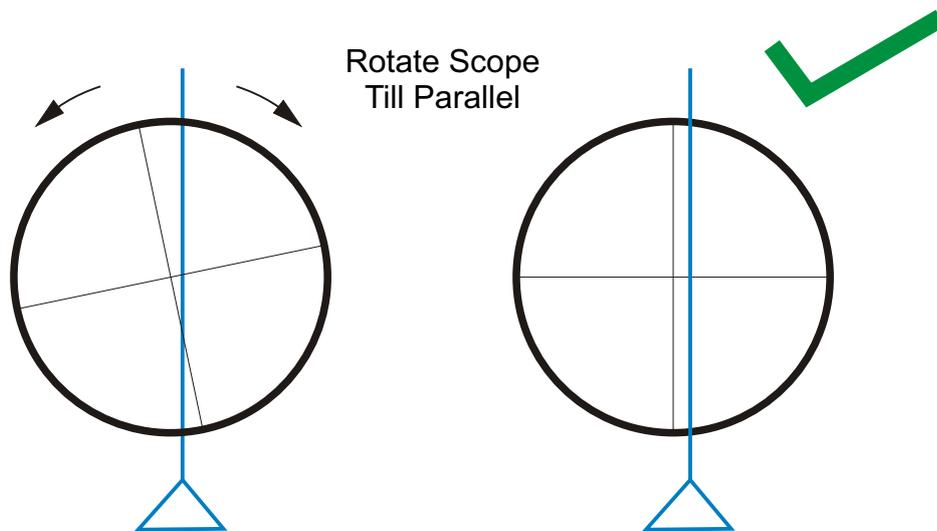


Diagram 6



- Torque only two of the cap screws "A" to 5 in/lb (0.6Nm) on each ring in an alternating fashion as per below in Diagram 7 below.

NOTE: Never exceed the scope manufacturer's recommended torque settings when fastening the ring mount cap screws. Incorrect torque settings may possibly damage the scope internals.

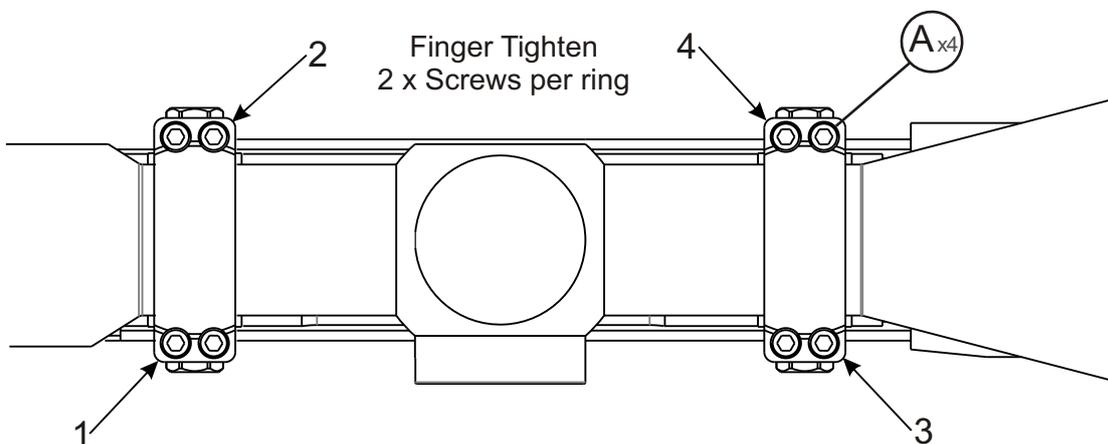


Diagram 7

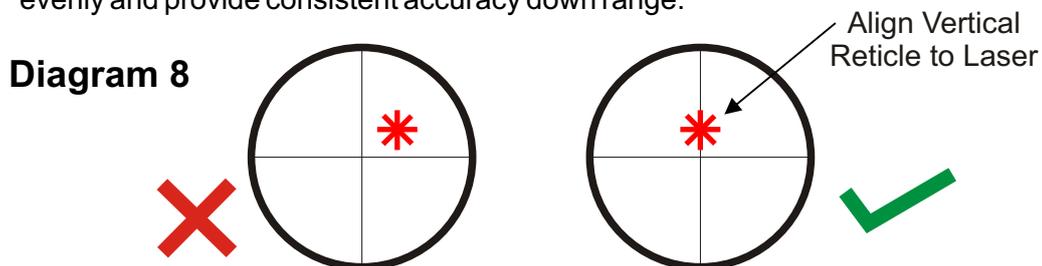
Windage and Parallax Adjustment



7) Scope centre line alignment to rifle bore (parallax adjustment) is performed as follows:

- Insert laser bore sight into the muzzle of the barrel (using the manufacturer's instructions).
- Ensure the scope reticle's windage adjustment is still centralized.
- Switch on the laser bore sight. The laser dot should be clearly visible against a surface that is directly opposite to the muzzle.
- While looking through the scope, adjust the hex nuts (diagram 9) "B" on the ring bases to move the scope windage left or right until the vertical reticle is located on the laser dot. See Diagram 8.
- Firmly finger tighten the windage hex nuts "B"

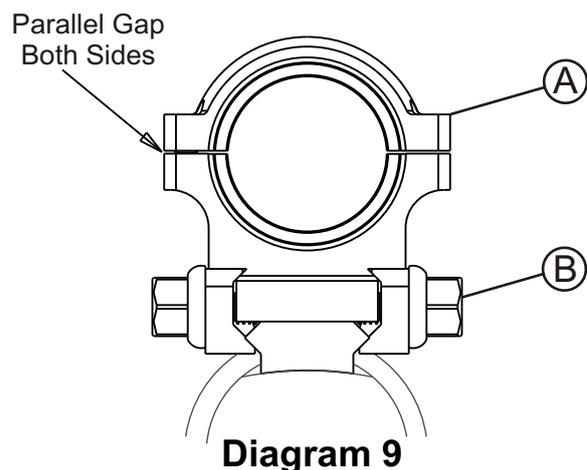
NOTE: It is recommended that the hex nuts, "B", be adjusted evenly between the front and rear ring mounts to eliminate the error. Doing this will distribute any misalignment evenly and provide consistent accuracy down range.



Final Fastening of Hex Nuts

8) Final fastening of the windage hex nuts (Diagram 9) "B" and cap screws (Diagram 9) "A" are performed as follows:

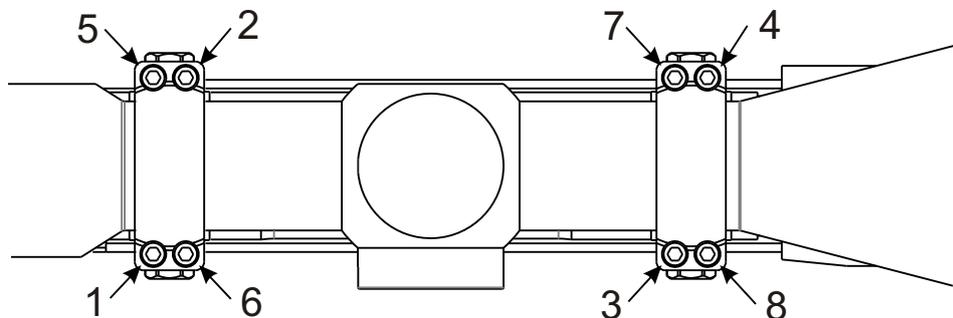
- 1) Set the Rifle Scope Torque Wrench to 10 in/lbs (1.2Nm)
- 2) Begin torqueing all windage hex nuts to 10 in/lbs (1.2Nm) in an alternating pattern in the order shown in (Diagram 9) "B".
- 3) Look through the scope and confirm that the laser has not moved off of the vertical reticle. Continue if correct, else repeat step 7 above.
- 4) Increase the Rifle Scope Torque Wrench by an extra 5 in/lbs (15 in/lbs total) (1.7Nm total).
- 5) Continue torqueing all windage hex nuts in alternating pattern discussed above.
- 6) Repeat the above two steps until a final torque setting of 50 in/lbs (5.6Nm) is reached.
- 7) Look through the scope and confirm that the plumb line is still parallel to the vertical reticle.
- 8) If incorrect repeat step 6, 7 and 8 until correct.
- 9) Once correct, you may now continue to the next section



Final Fastening of Scope Cap Screws

- 1) Set the Rifle Scope Torque Wrench to 5 in/lbs (0.6Nm)
- 2) Begin torqueing all windage hex nuts to 5 in/lbs (0.6Nm) in an alternating pattern in the order shown in (Diagram 10) "B".
- 3) Look through the scope and confirm that the laser has not moved off of the vertical reticle. Continue if correct, else repeat step 7 above.
- 4) Increase the Rifle Scope Torque Wrench by an extra 5 in/lbs (15 in/lbs total) (1.7Nm total).
- 5) Continue torqueing all scope cap screws in an alternating pattern shown below in Diagram 10.
- 6) Repeat the above two steps until manufacturers torque specifications are reached.
- 7) Look through the scope and confirm that the plumb line is still parallel to the vertical reticle.
- 8) If incorrect, repeat step 6, 7 and 8 until correct.
- 9) Once correct, your AWE mounts and scope is set up and ready to use

Diagram 10



NOTE: Only use the scope manufacturer's recommended torque settings and technique.

Final Safety Procedures

Finally, you are ready to use your rifle. Safely remove all items or tools used to set up the ring mounts and scope. Make sure you have removed the laser bore sighter from the barrel. Please also make sure the barrel is free of any objects before using your rifle.

First Time at the Range after Installation

- Secure your rifle on sand bags or a shooting stand.
- Place the target at a comfortable viewing distance down-range so that you will see a clear picture of your target center when looking through the barrel. This is normally at a distance of approximately 25-50 meters.
- Next, remove your bolt and bore-sight your rifle by looking at the target through the barrel.
- Position the target center in the center of your view through your barrel.
- Adjust your scope elevation to place the reticle slightly above target center.
- Re-fit your bolt and take a shot or two to confirm you are on the paper.
- Now you can move the your target to 100 meters and shoot a grouping.
- This grouping can now be used to zero your scope to your rifle impact points.

If there are any further question, please do not hesitate to contact our support team. Happy Shooting!