



"EZ MOTOR RETAINER" INSTRUCTIONS

Finally, a simple, affordable motor retainer that can be installed on new rockets or retrofit to already built rockets. Retains Aerotech, CTI, and snap-ring style hardware!

BINDER DESIGN

Contents:

- 2 Threaded Inserts
- 2 Stainless Screws
- 2 Short Nylon Spacers
- 2 Tall Nylon Spacers
- 2 Washers

Needed:

- Pencil or Pen
- Straightedge
- Center Punch
- Drill
- 15/64" Drill Bit
- 5/32" Hex Key
- 3/32" Hex Key

Important!: The EZ Motor Retainer is designed to work on rockets with the motor tube flush with the back centering ring. If your motor tube extends past the aft ring, you will need to trim it flush with the aft ring.

Preparation: Locate all of the parts and set them aside where they won't get lost. If you are missing anything, please contact Binder Design for replacement.

Marking for drilling: First, using your straightedge, draw a line across the aft centering ring, centered across the motor tube, **but not in line with any of the fins.** See Fig. 1

Locate one of the metal washers and note that one side of it is clipped.

Now, slide a motor casing into the motor mount tube partway, and slide the clipped part of the washer against the casing, intersecting the line you just drew. Refer to Fig. 2 Mark by drawing a circle where the center of the washer hole intersects the straight line you drew earlier.

Repeat this step for the other side.

Drilling: Use a center punch or awl to make sure the drill bit does not wander when you start drilling the hole. After you've used the center punch, drill the centering ring all of the way through with your 15/64" drill bit. Take your time and make sure you are not drilling at an angle!

Installing Inserts: Using your 5/32" hex key, thread the inserts into the ring. Go slow and make sure they are going in straight. Screw them in until they are flush with the back of the ring. **Do not over-seat!**

Using your Retainer: Refer to Figs. 3 & 4. The short nylon spacers are used with snap ring hardware, the tall nylon spacers are used with Aerotech and CTI hardware. When securing snap ring hardware, the clipped part of the washer catches behind the external thrust ring on the motor. When securing Aerotech and CTI hardware, the round part of the washer catches behind the aft closure of the motor. Be sure to use the right spacers for the job!

Fig. 1

Aft view

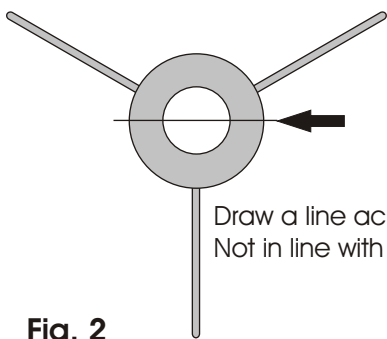
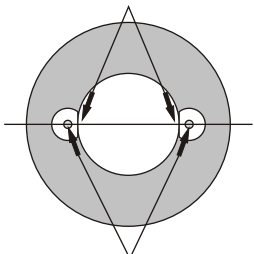


Fig. 2

Align clipped part of washer with motor mount. Slide washer against partially installed motor casing



Mark the center of each washer

Fig. 3



Aerotech or CTI

Fig. 4



Snap-Ring