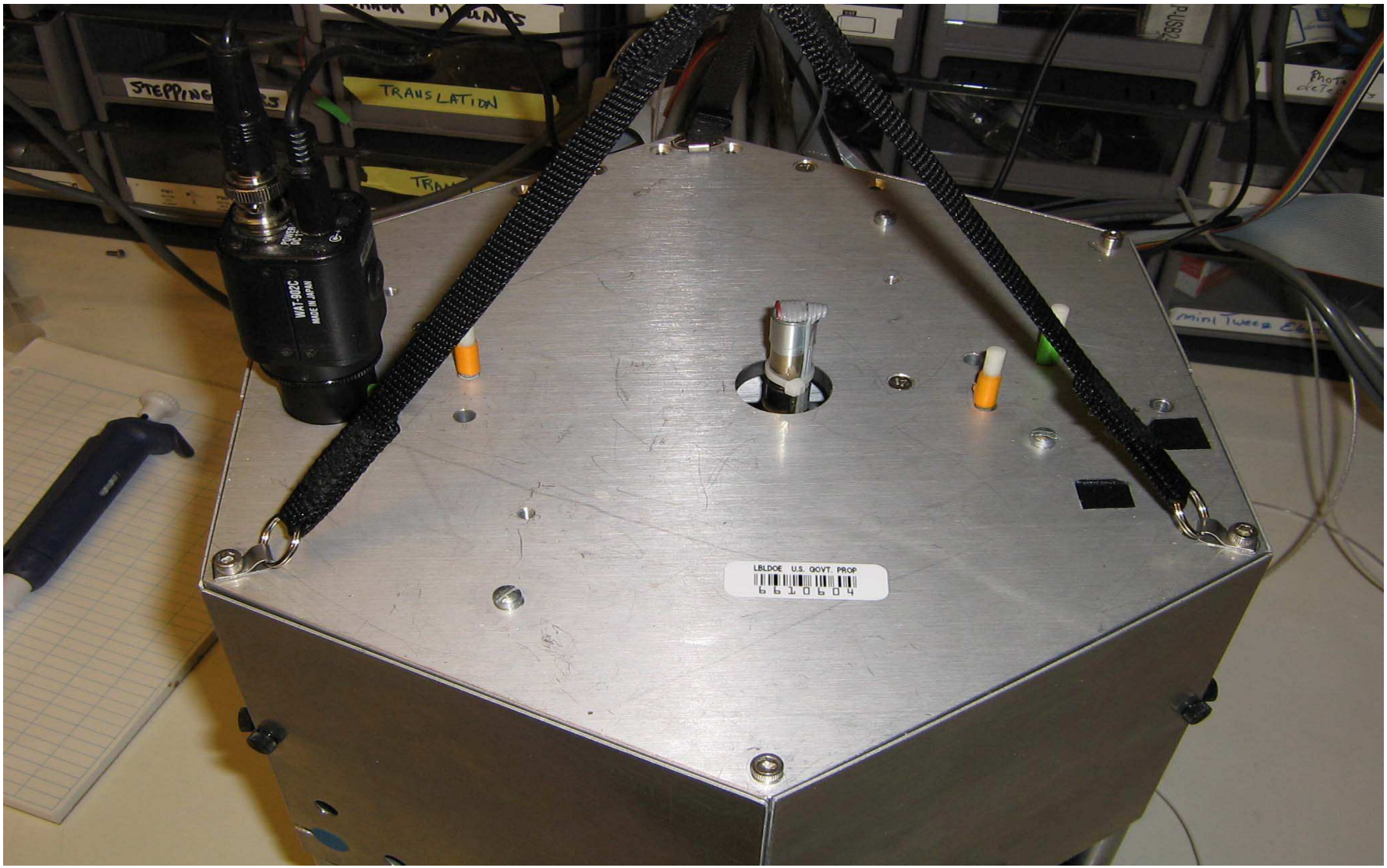
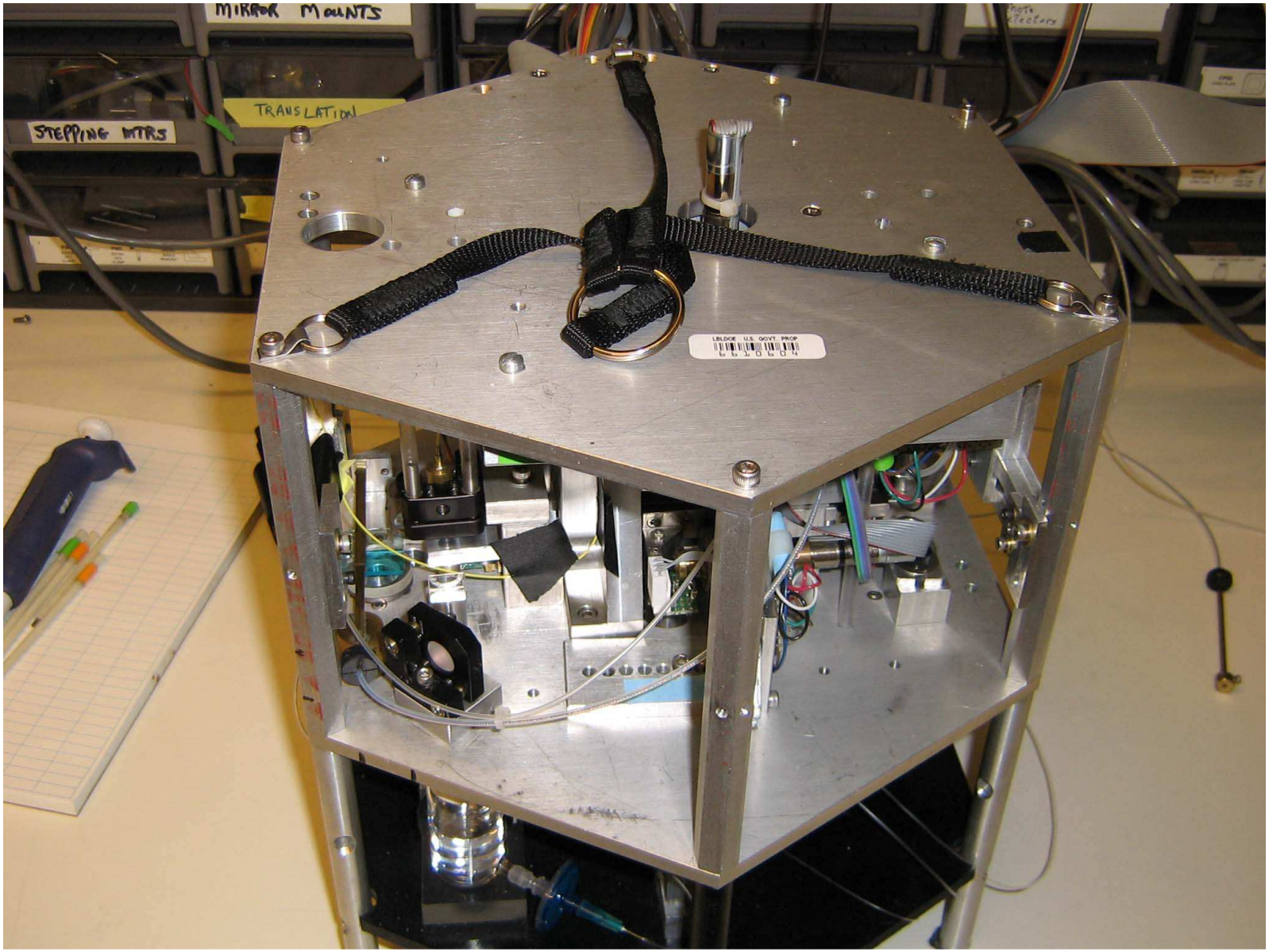
How to replace a wiggler

in 30 easy steps.

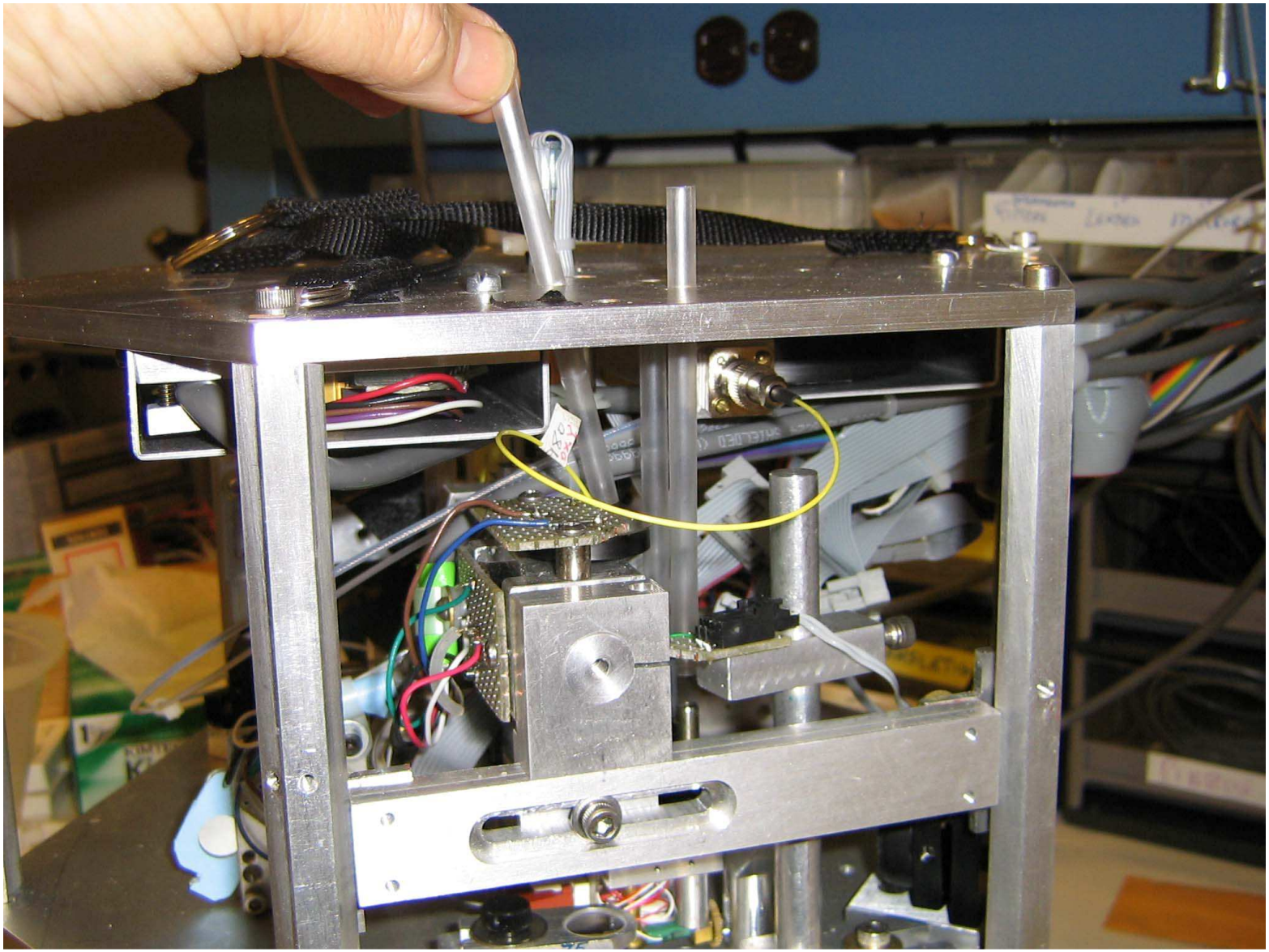
Top of mini-tweezers



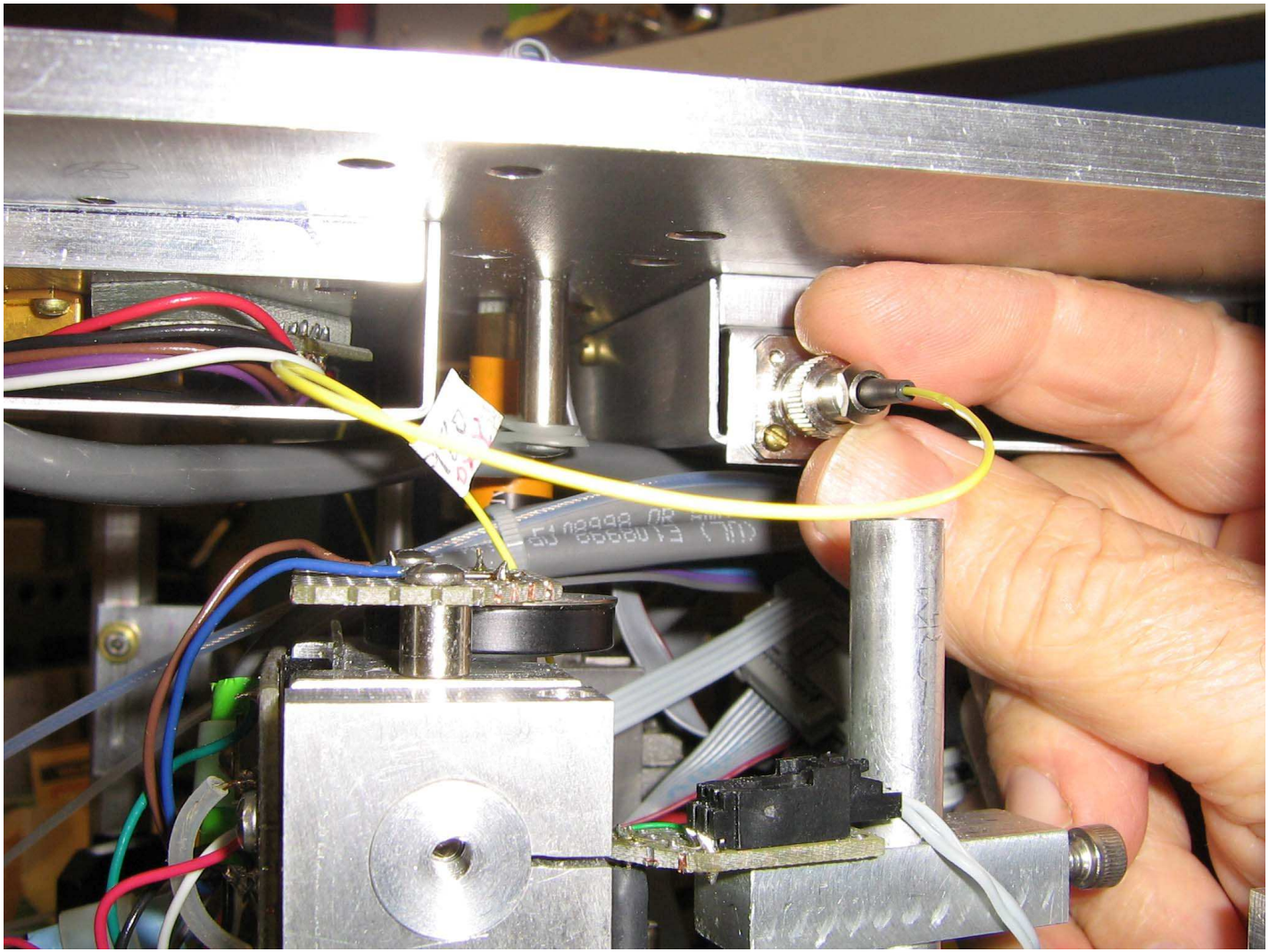
Remove CCD camera



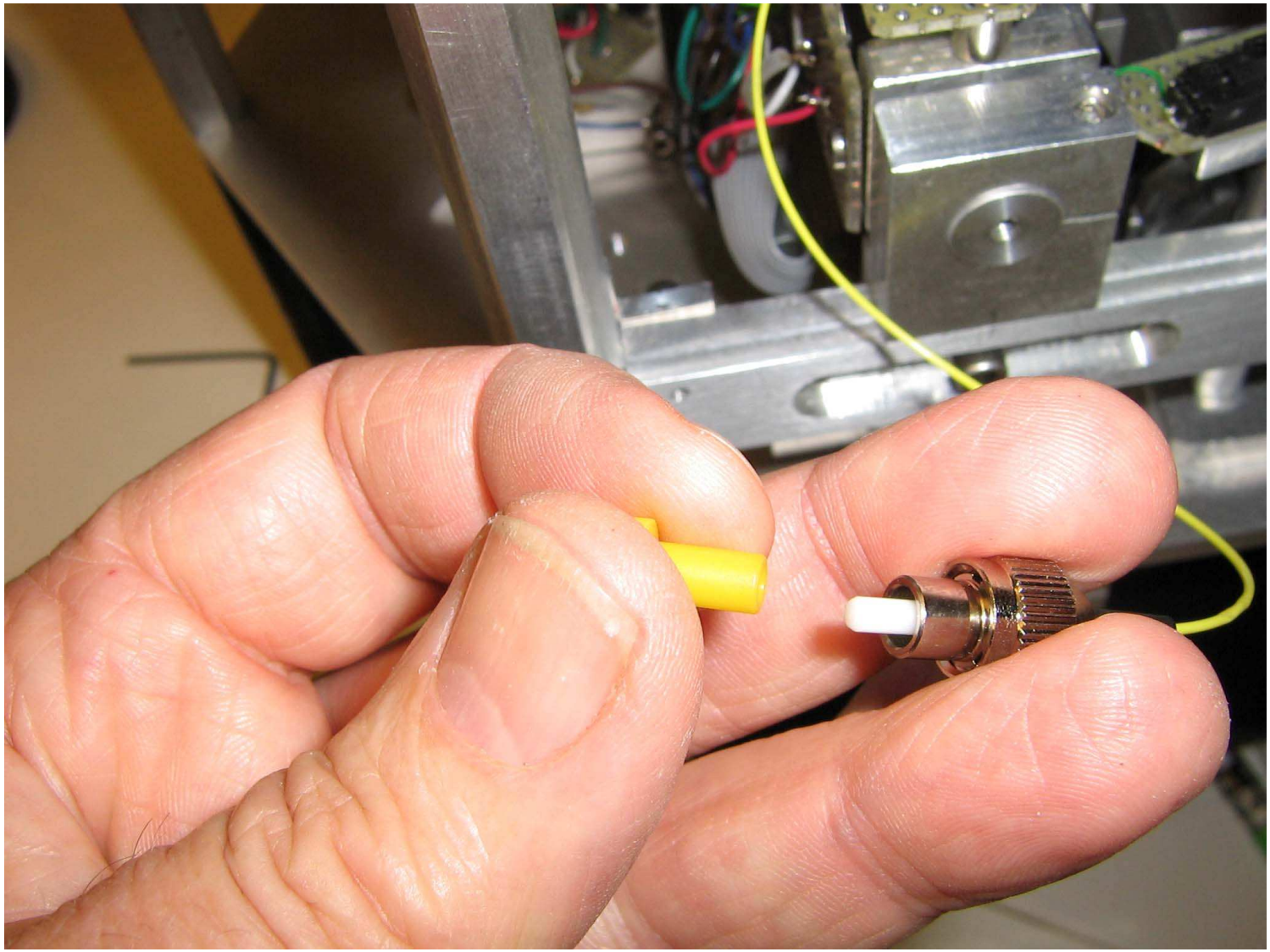
Remove plastic straws



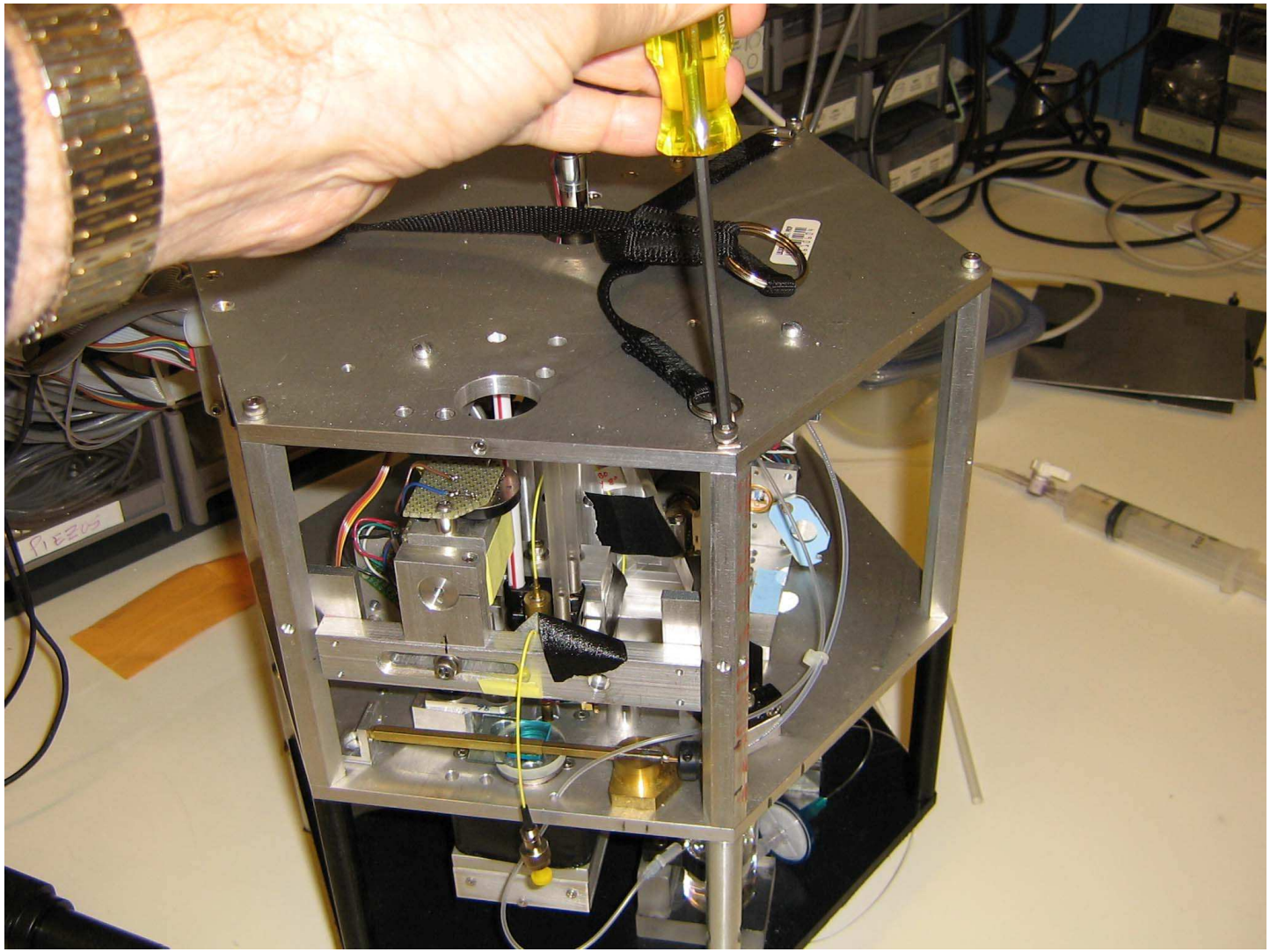
Unscrew fibers from both lasers.



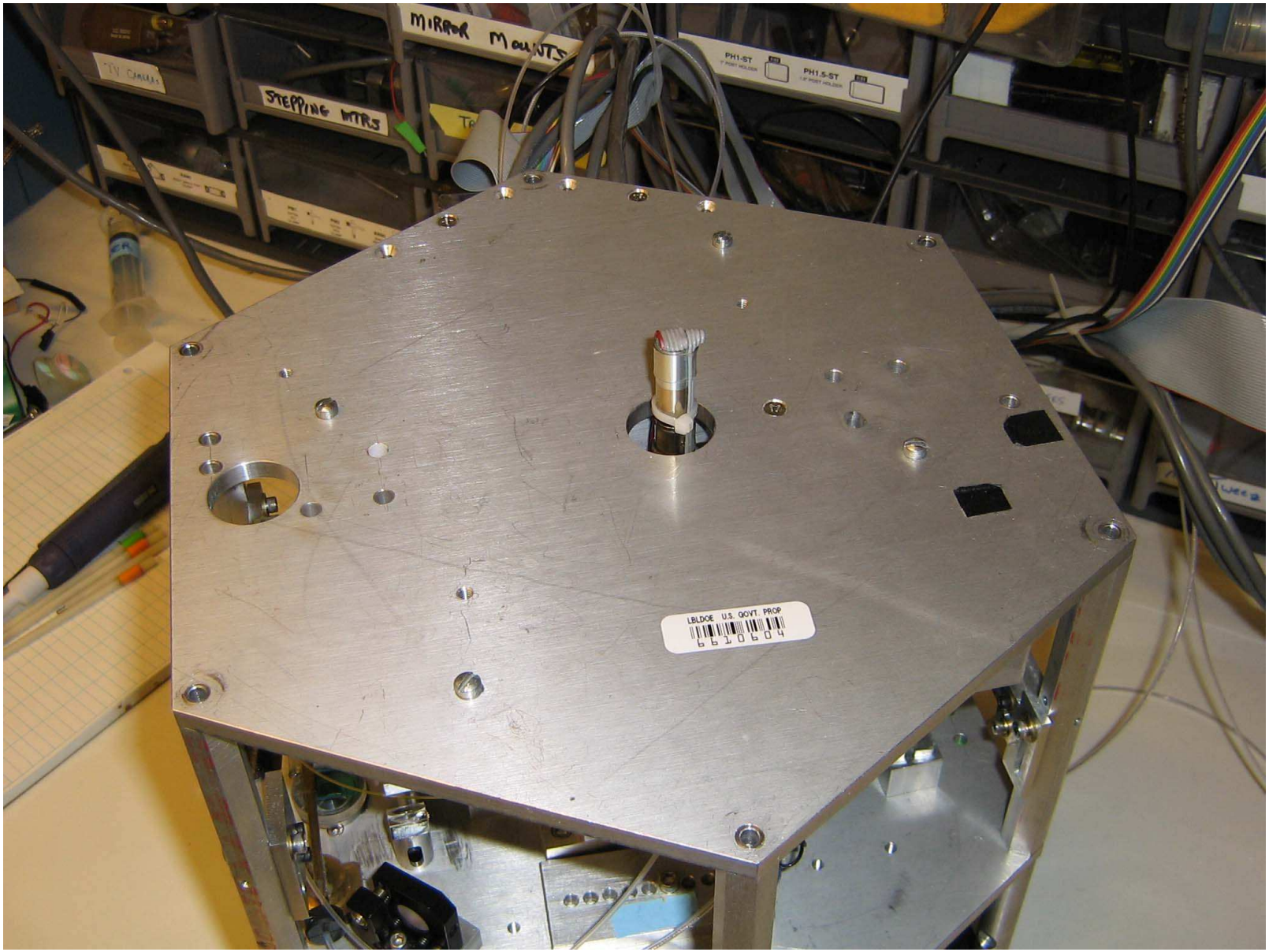
Protect fiber ends from dirt.
Do not touch centers of fibers with plastic or they might get dirty.



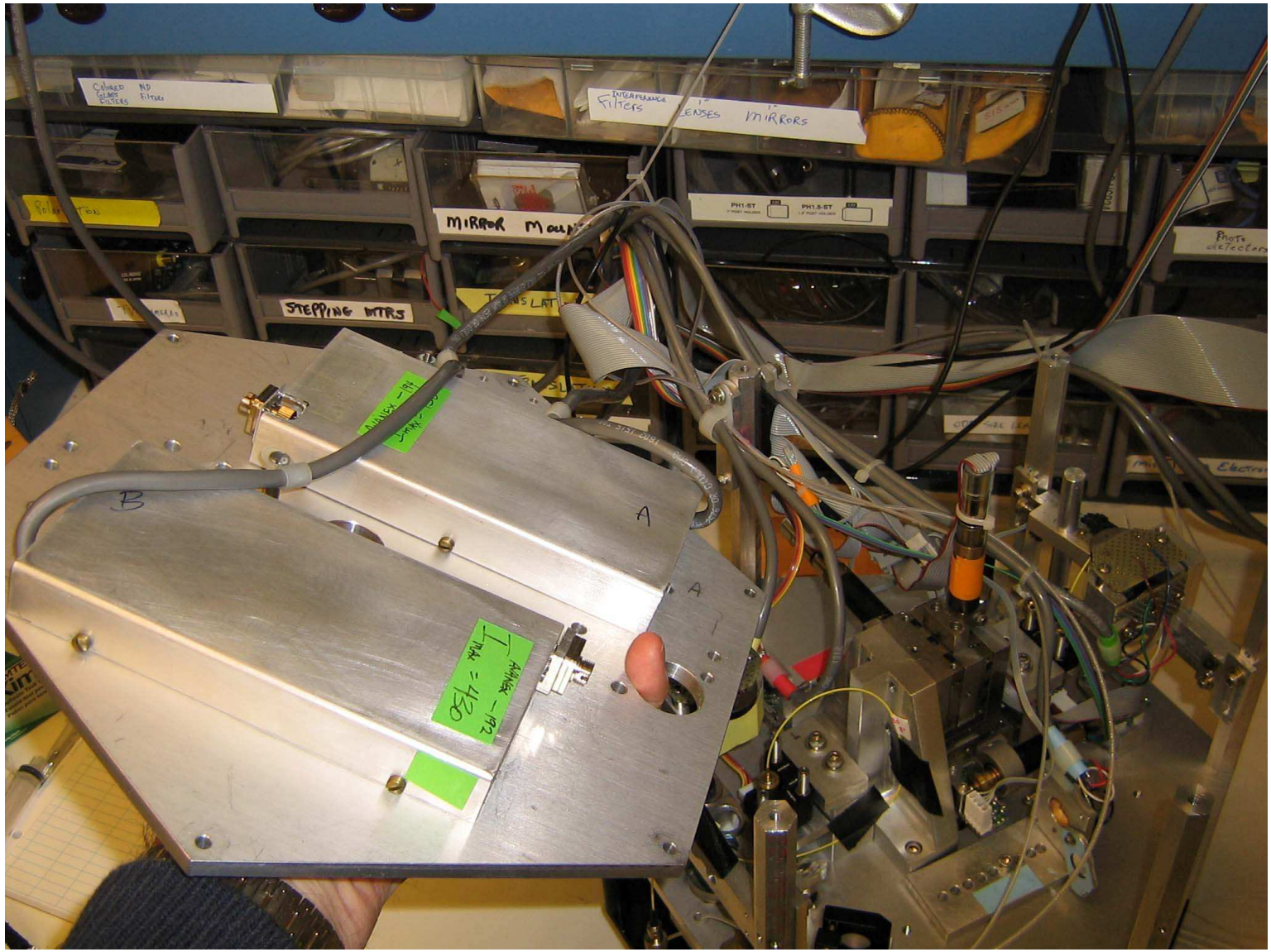
Unscrew straps



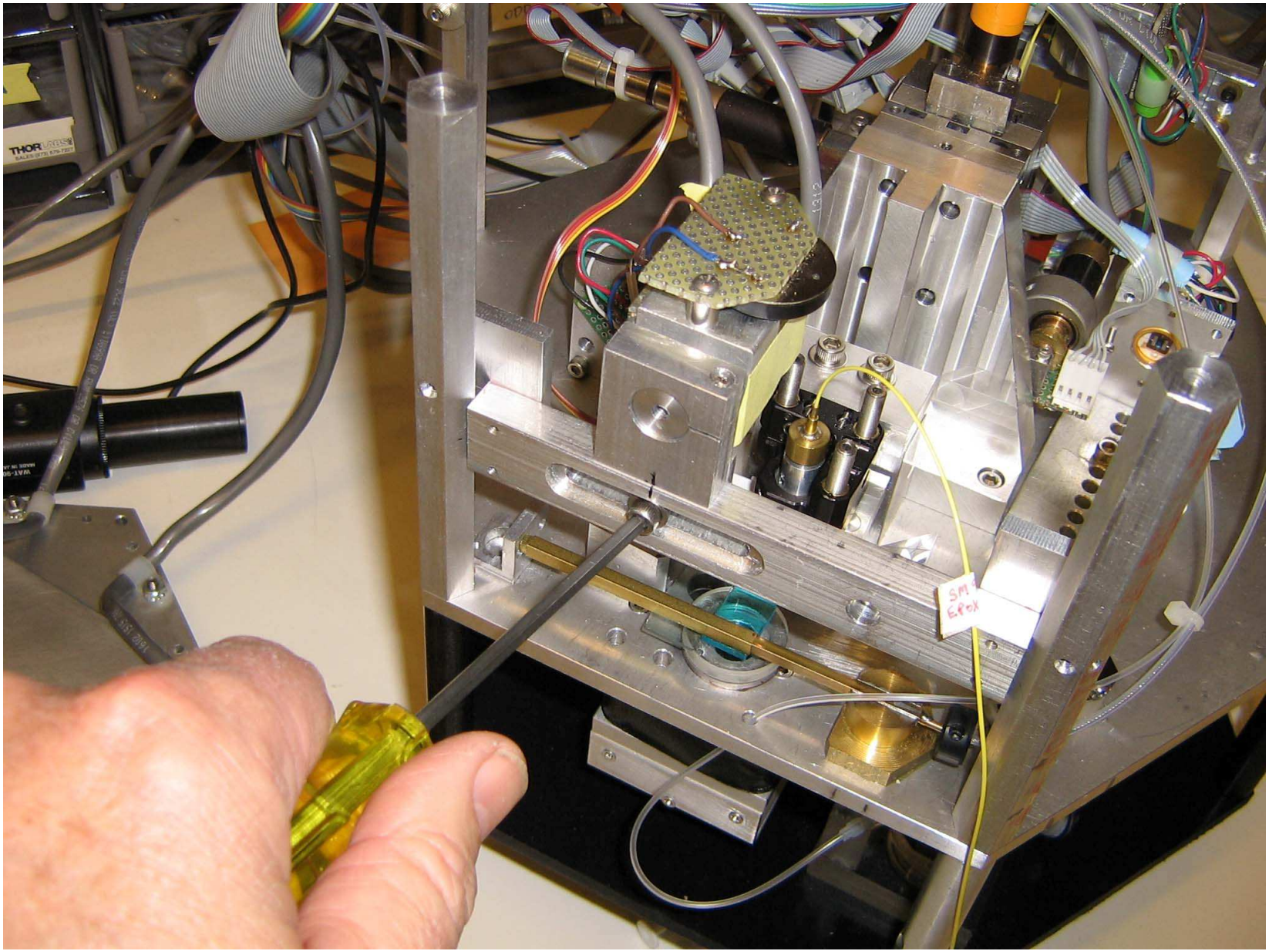
Remove 6 screws



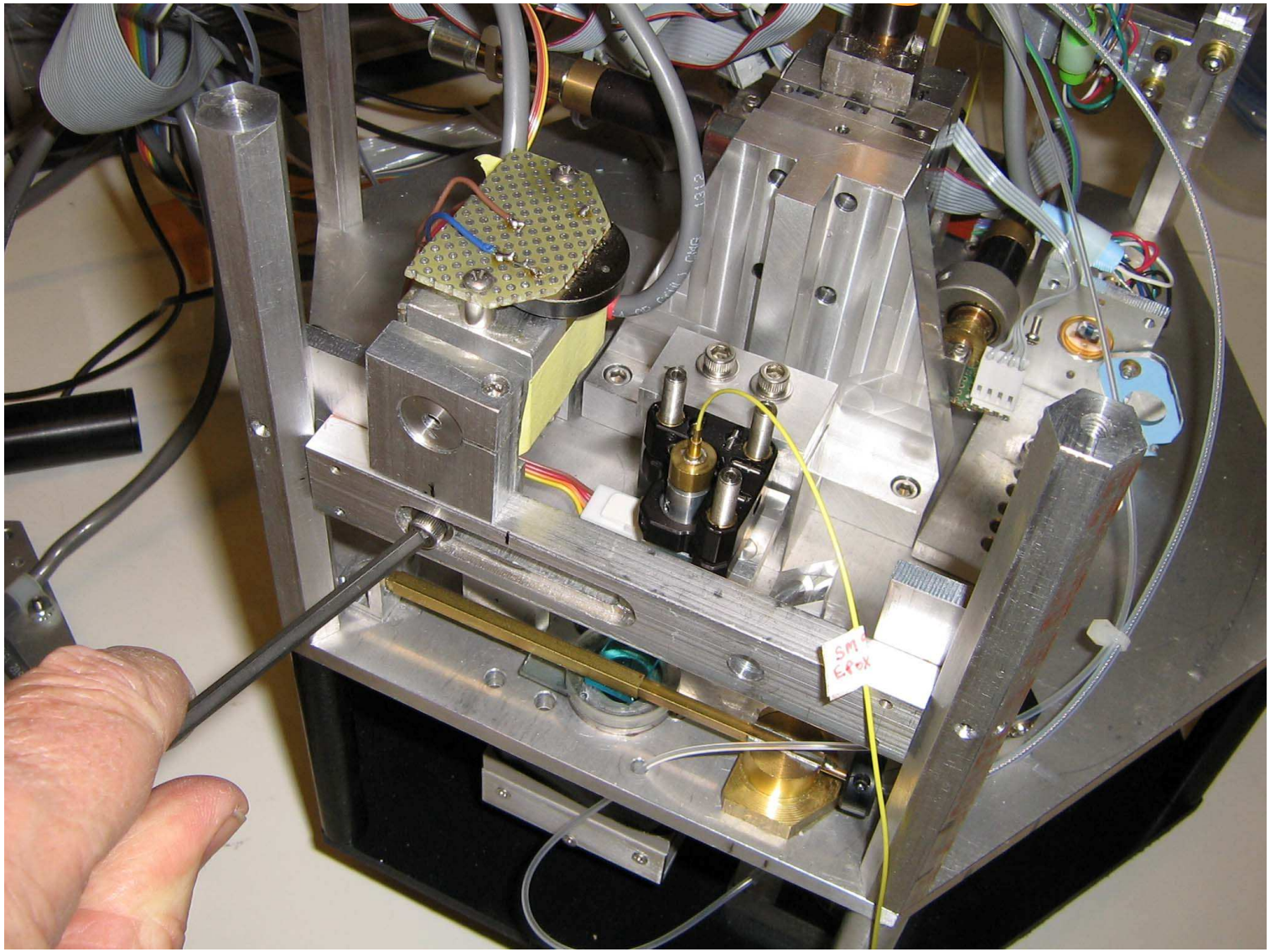
Lift off cover, flip upside-down, set to the side on table.



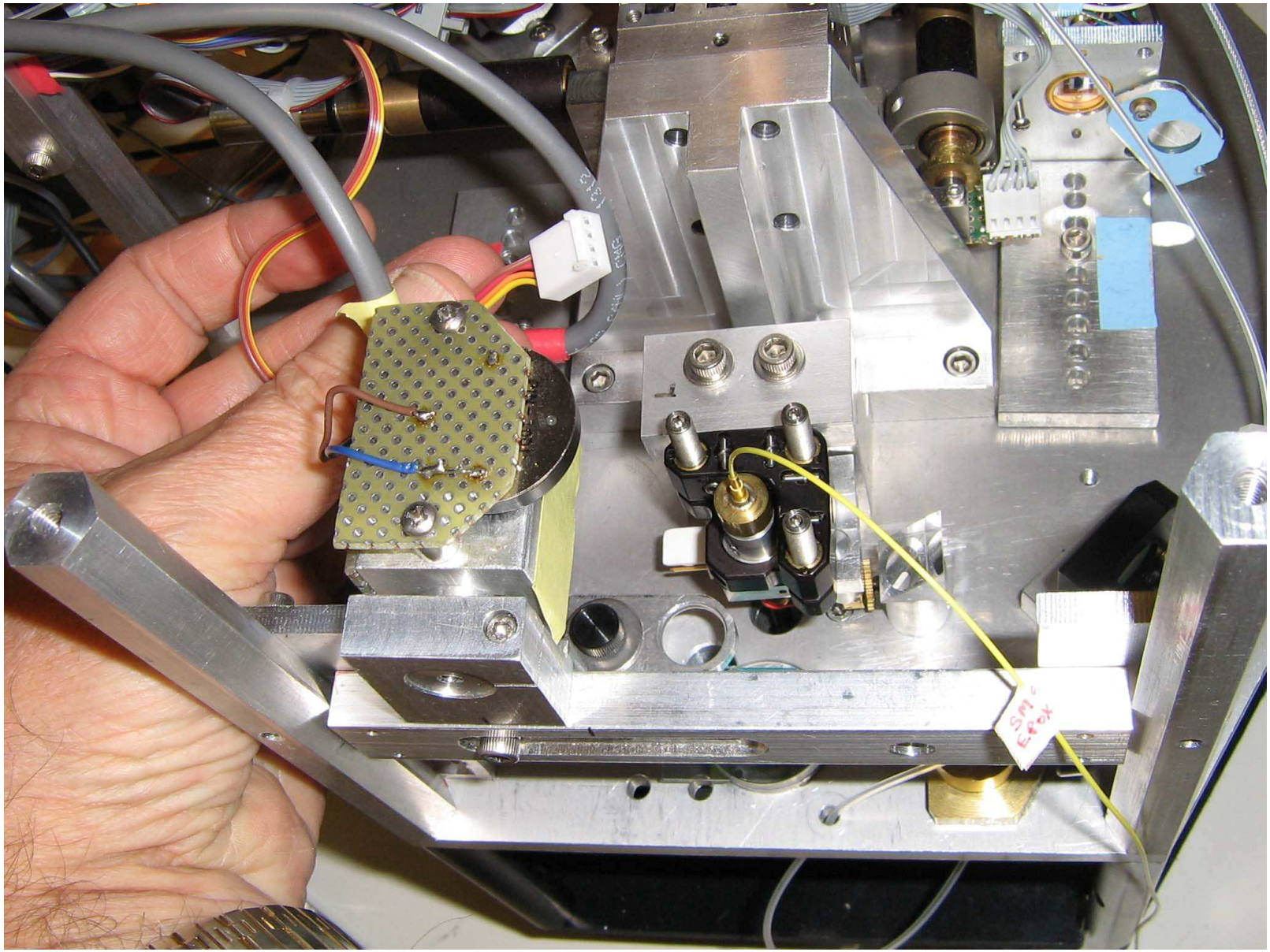
Mark detector position, loosen screw.



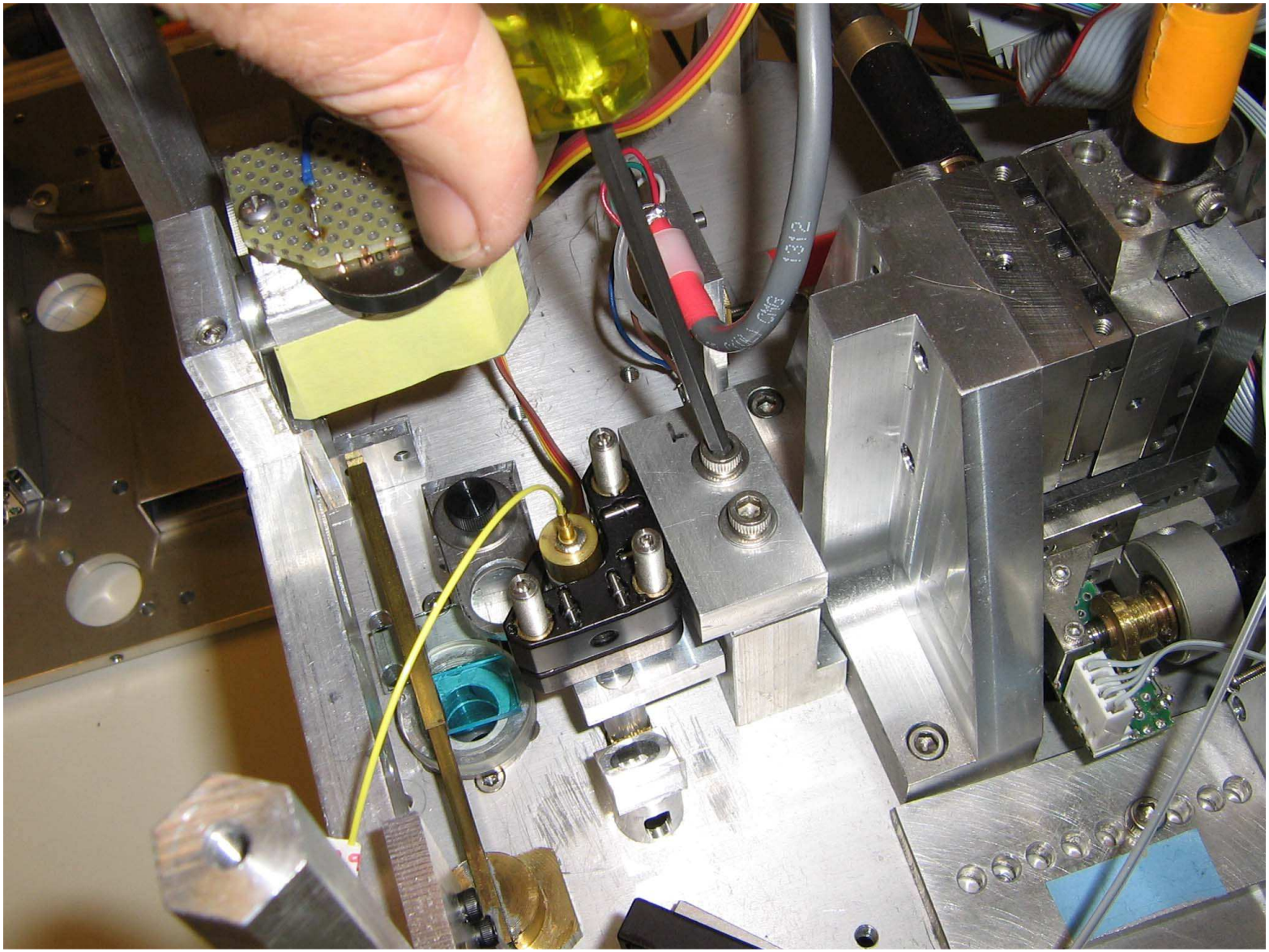
Move detector out of the way



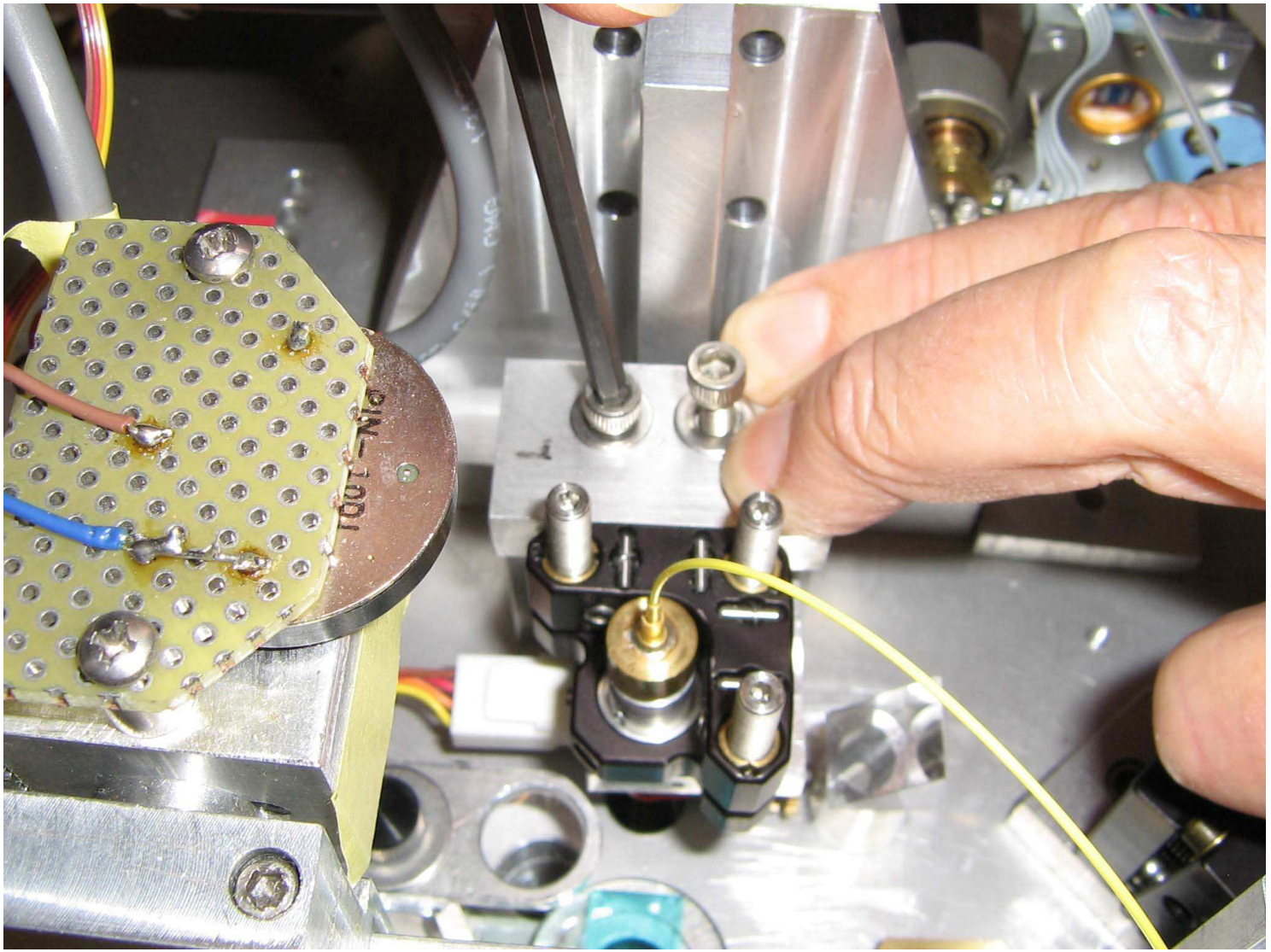
Remove connector from wiggler



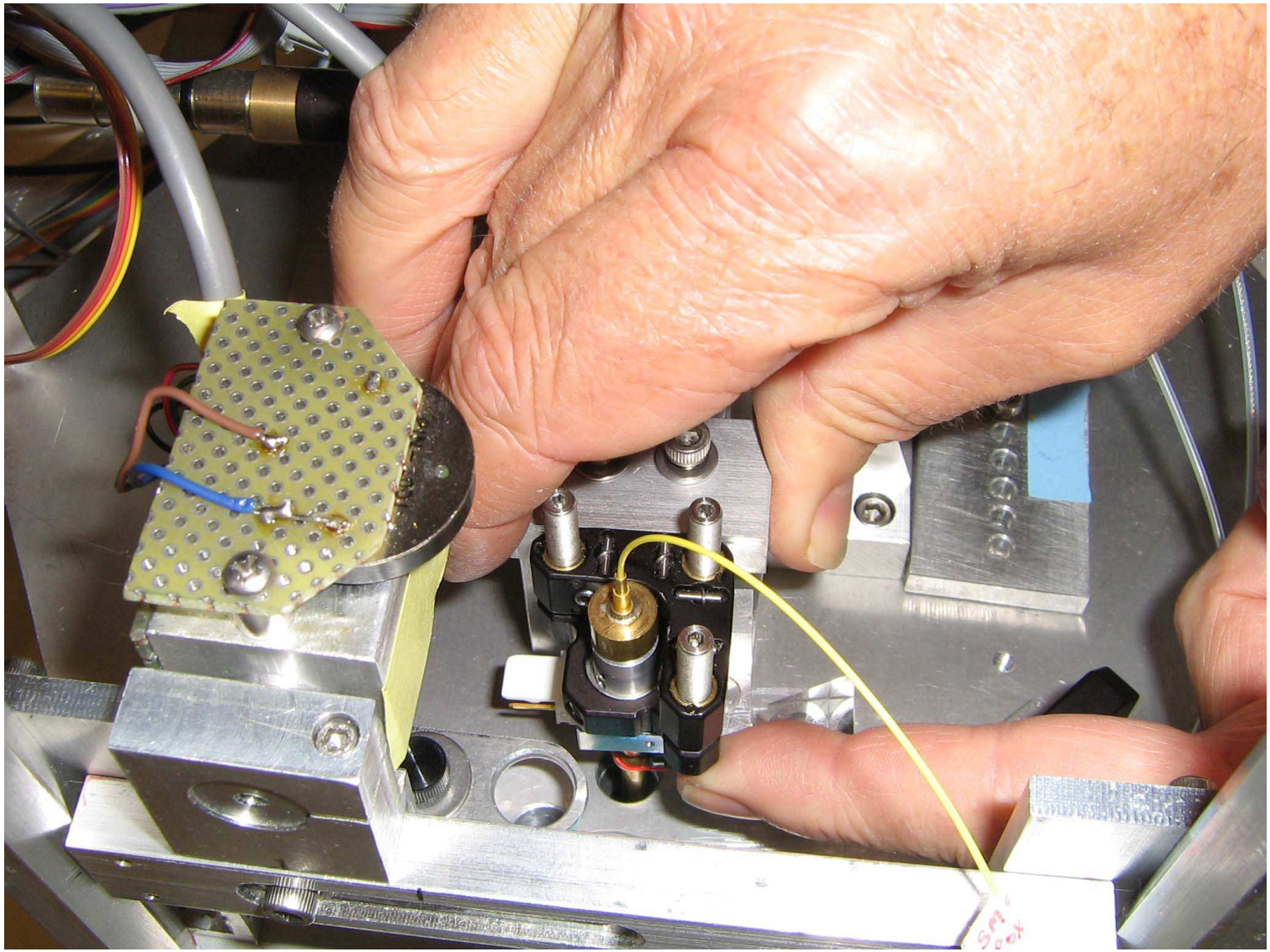
Loosen screws



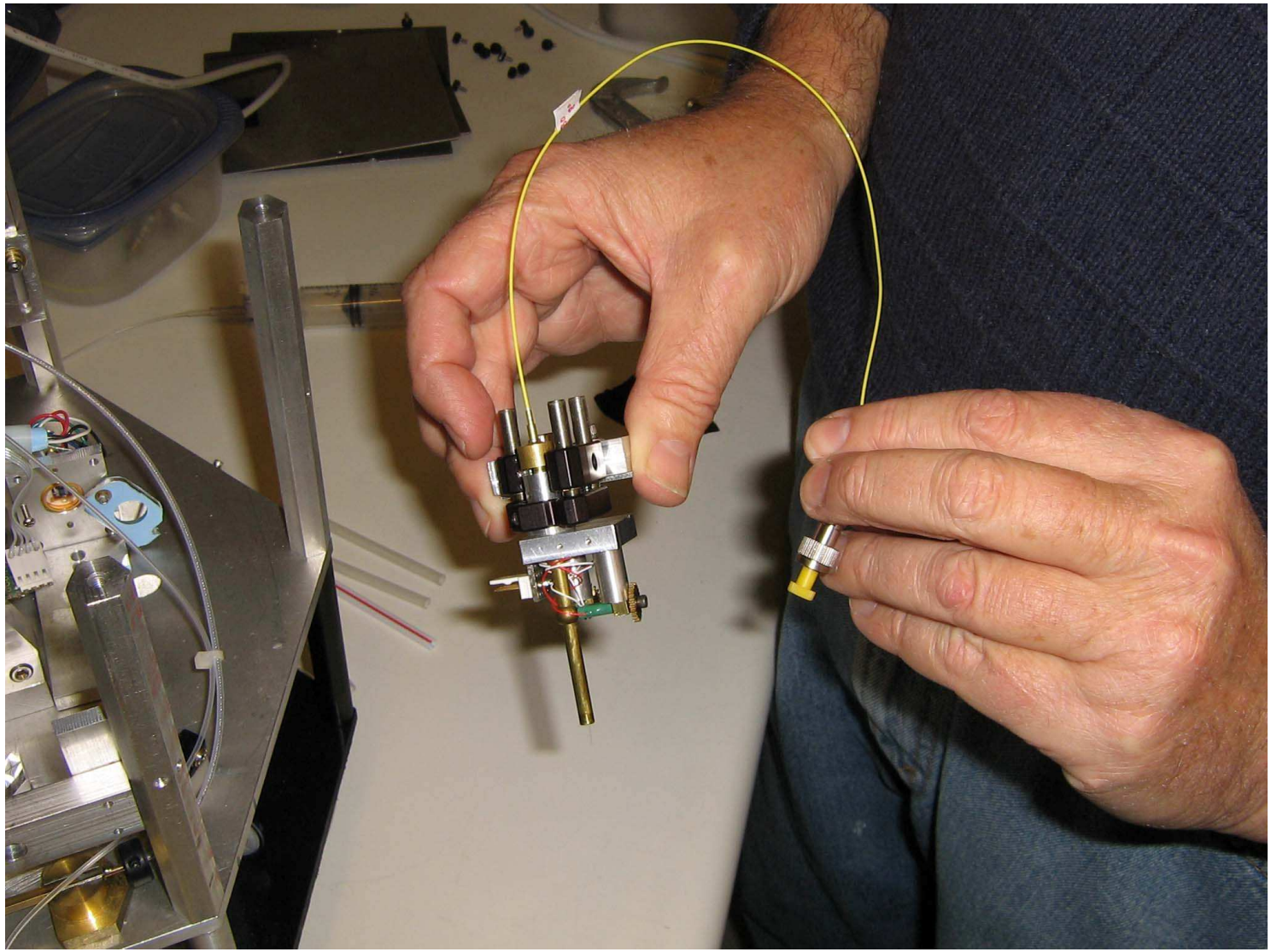
Keep wiggler pressed down so it does not tip



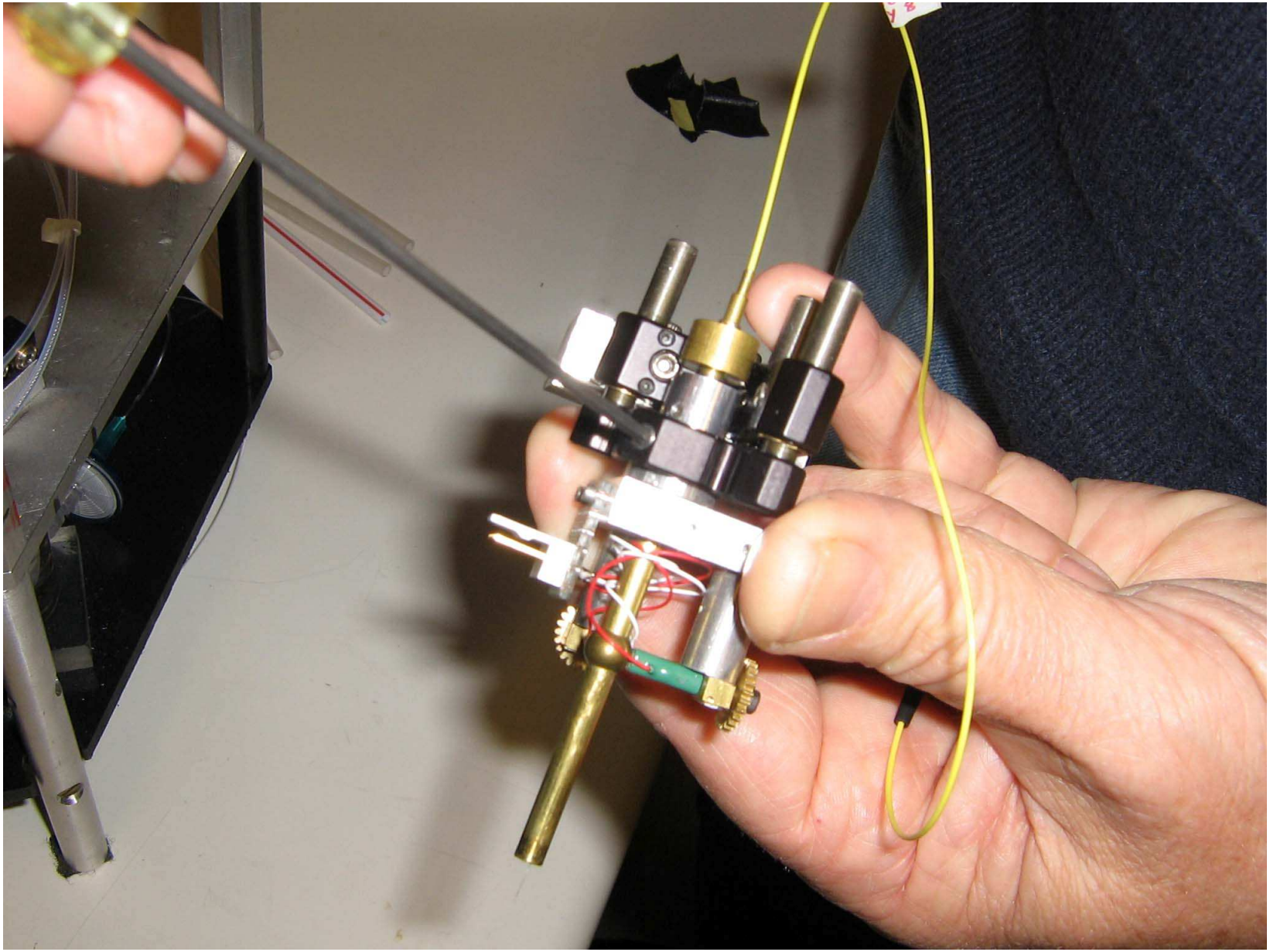
Pull straight up so fiber does not hit side of hole



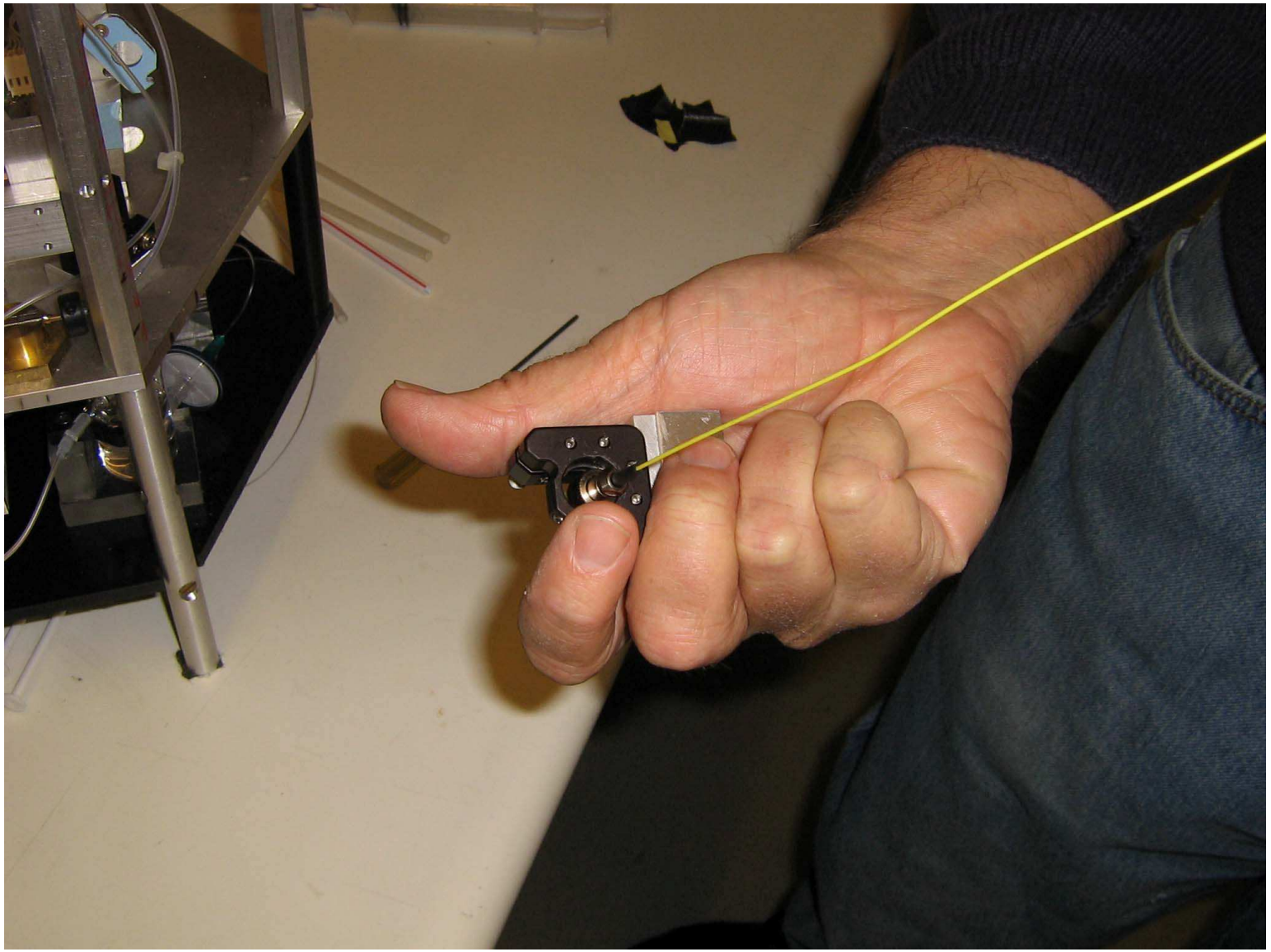
Wiggler is mounted inside 3-screw mirror mount



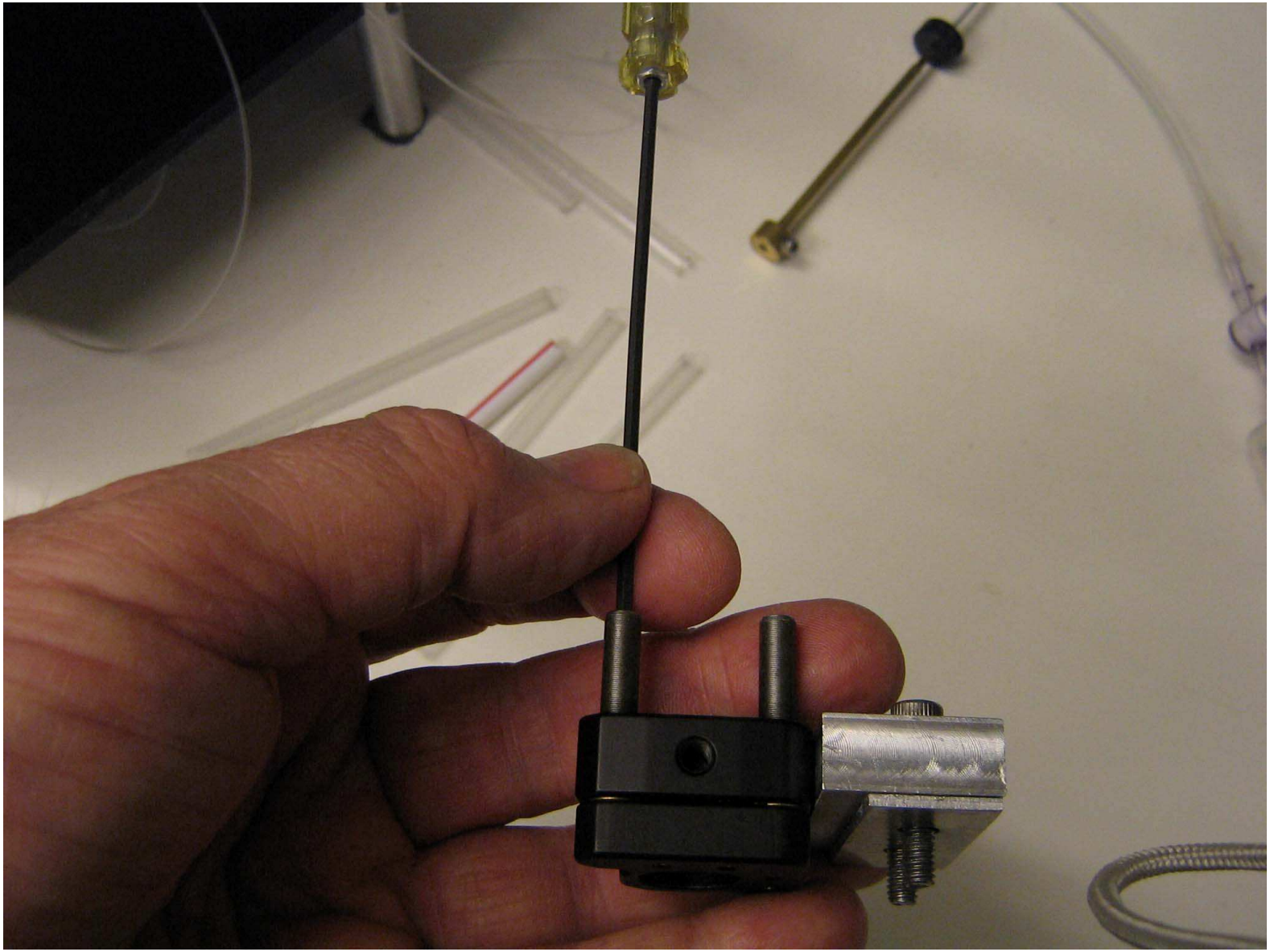
Remove wiggler from mount



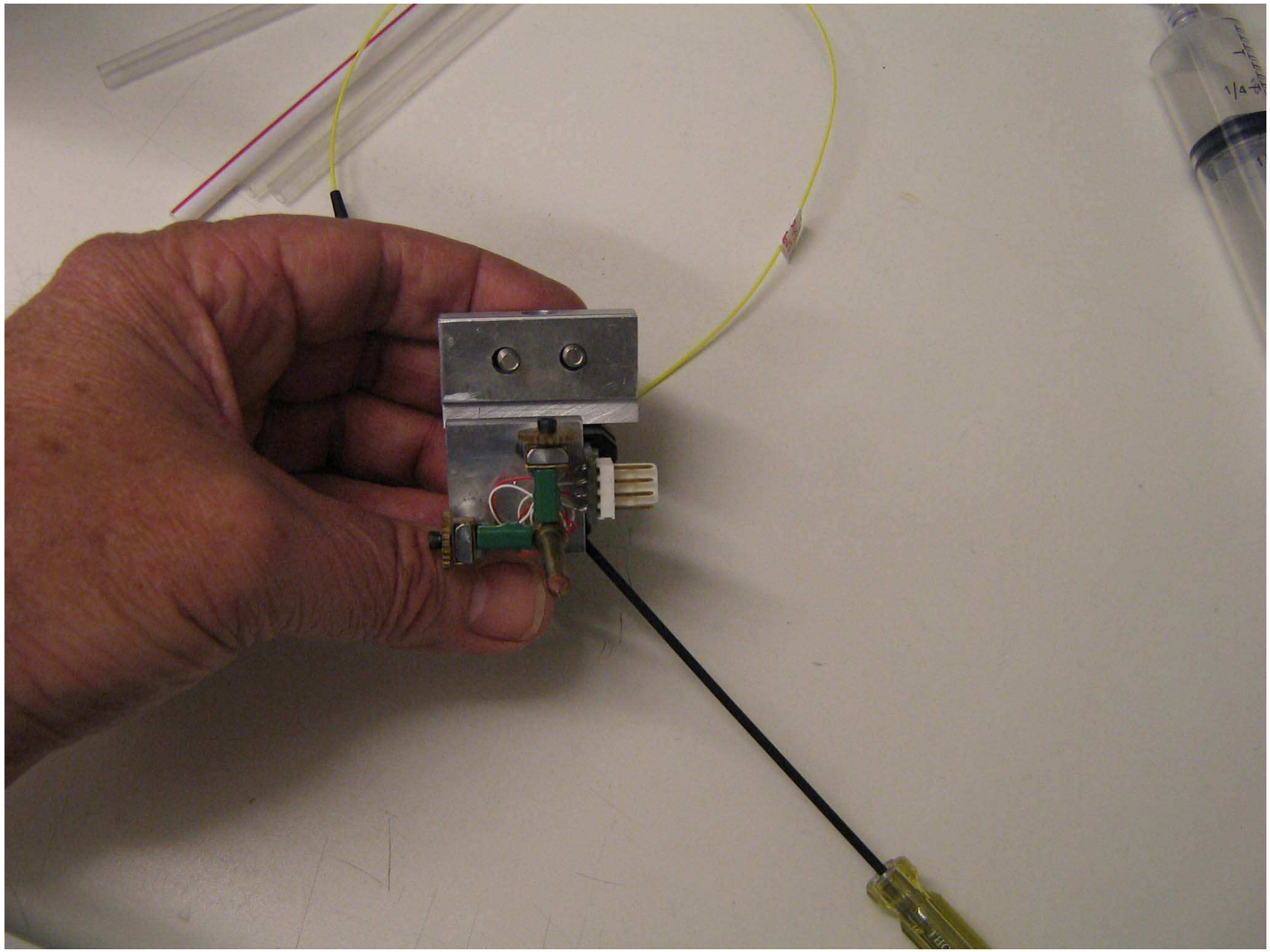
Pull fiber connector through hole



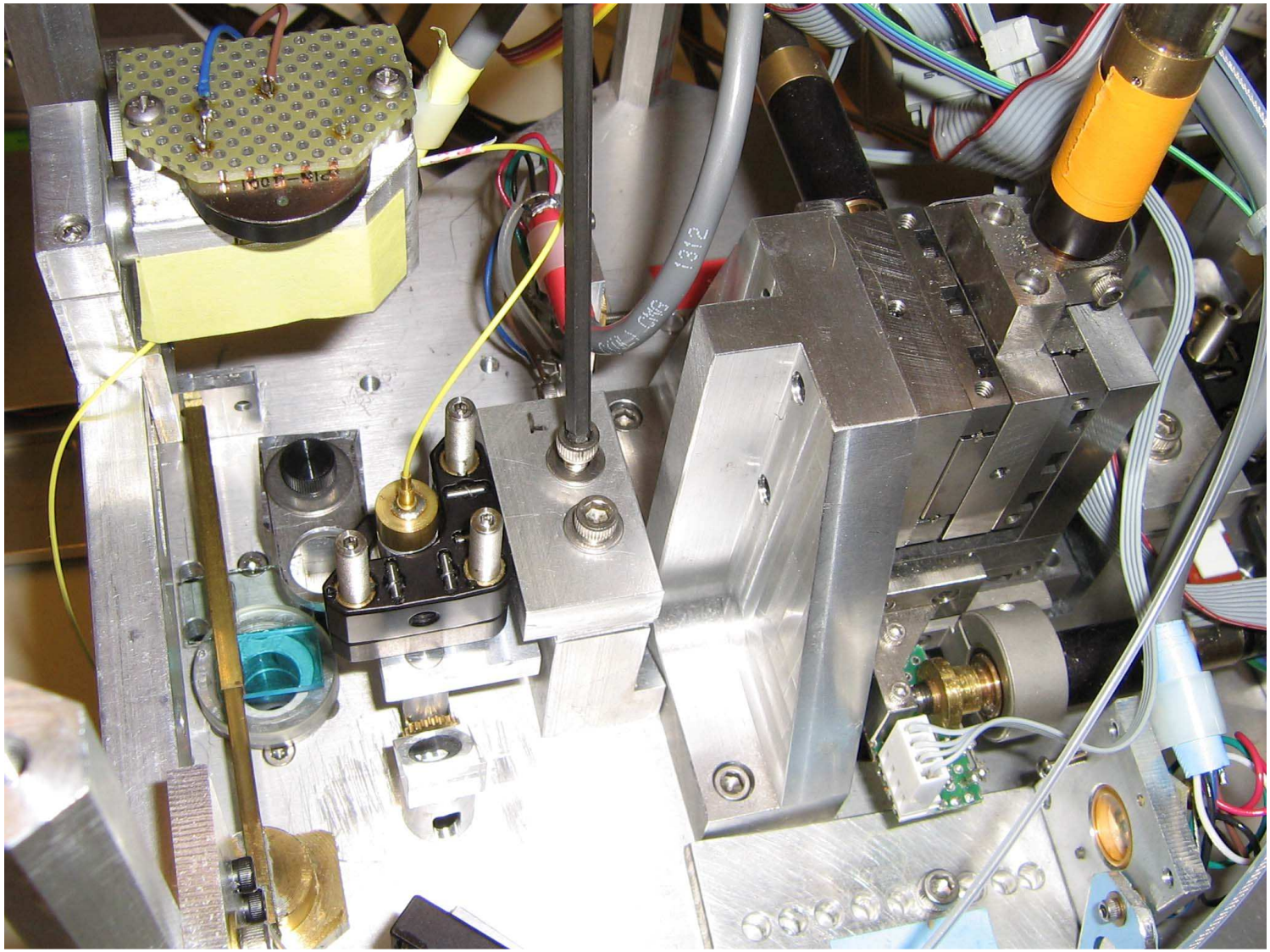
Retract 3 screws to minimum extension so new wiggler fiber will not hit pellicle



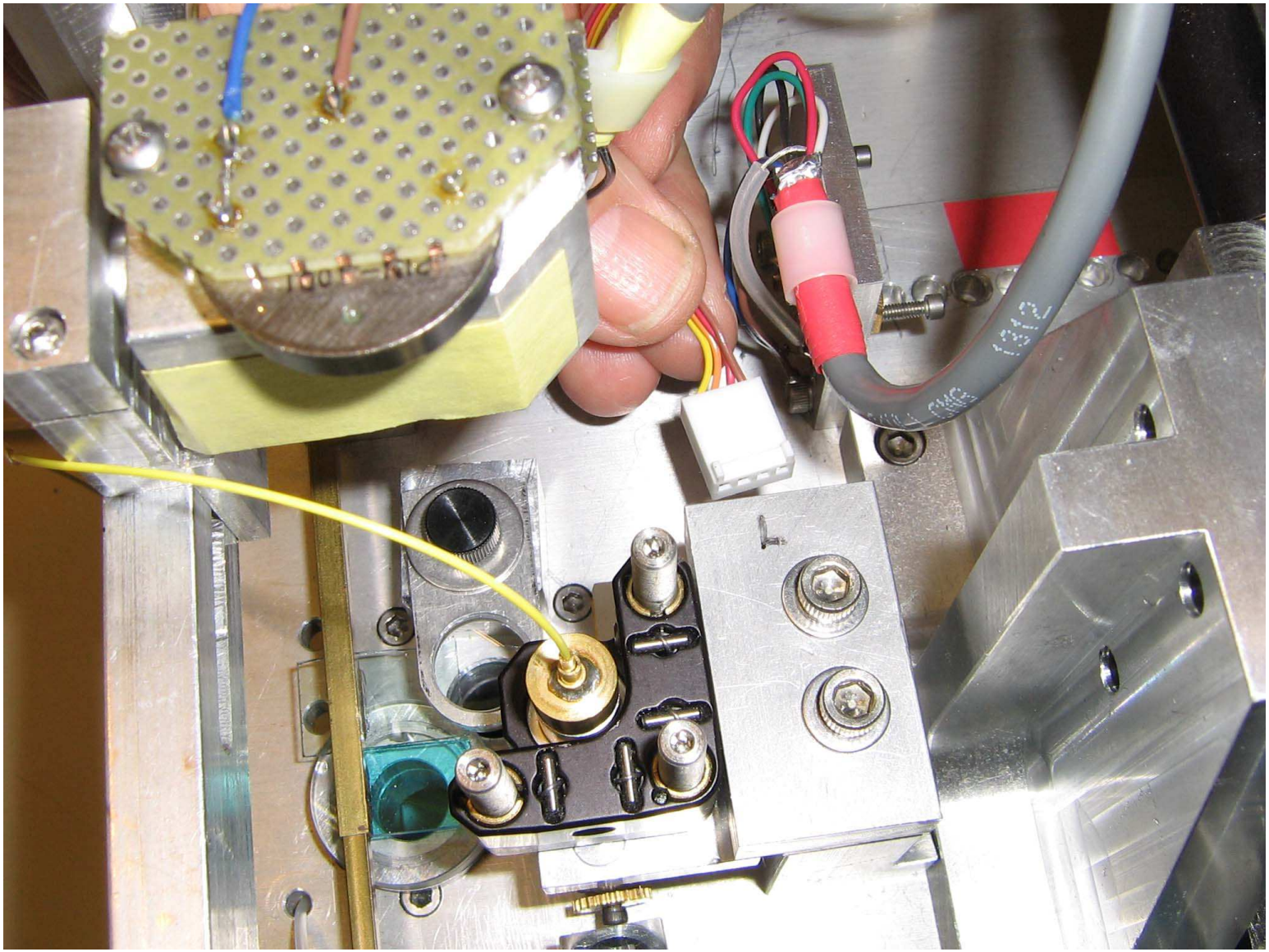
Screw new wiggler into mirror mount.
Make edge of wiggler parallel to edge of mirror mount.



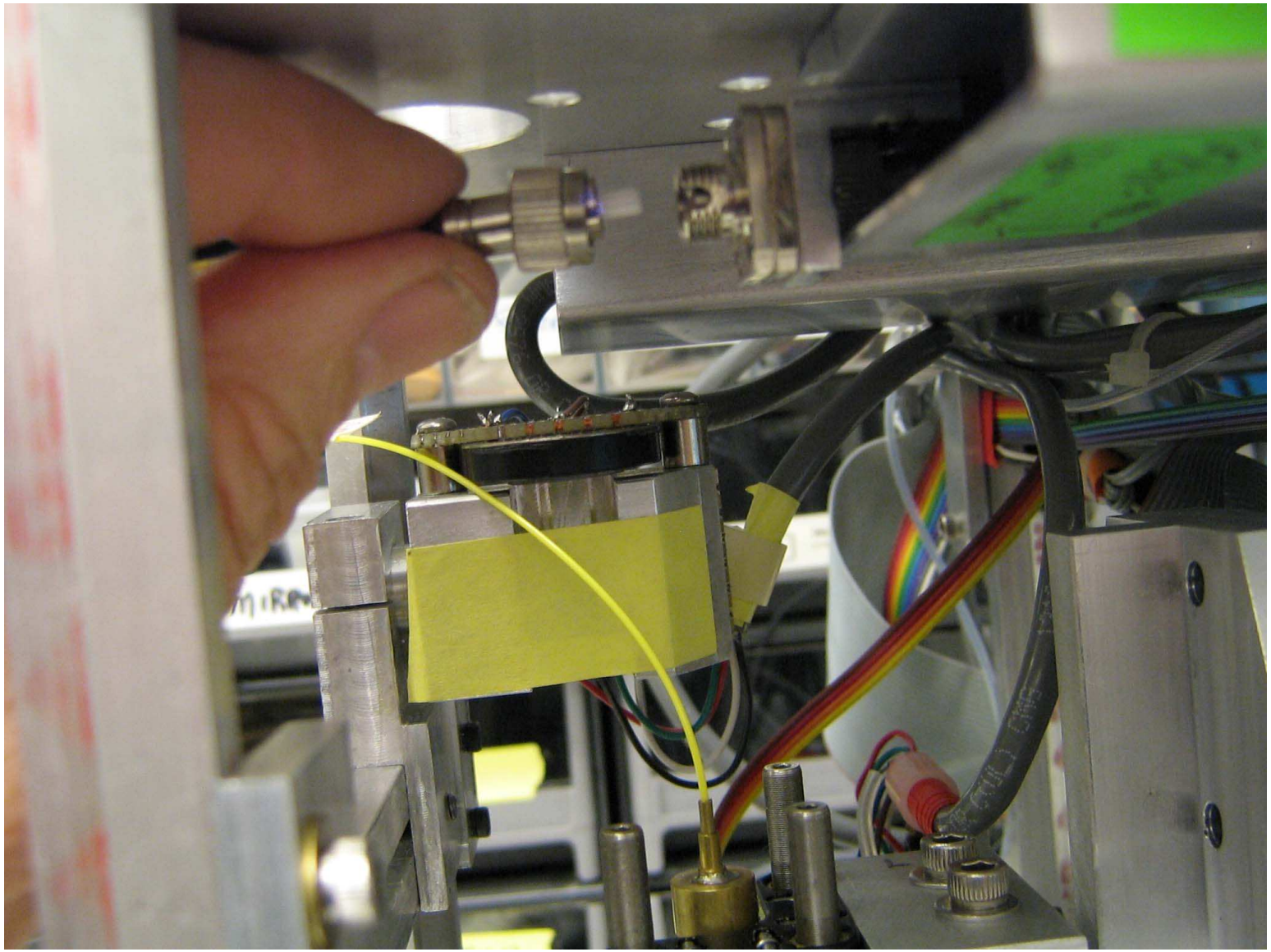
Lower wiggler into hole without touching fiber to sides of hole.
Tighten screws without letting wiggler tip to side.



Replace connector on wiggler

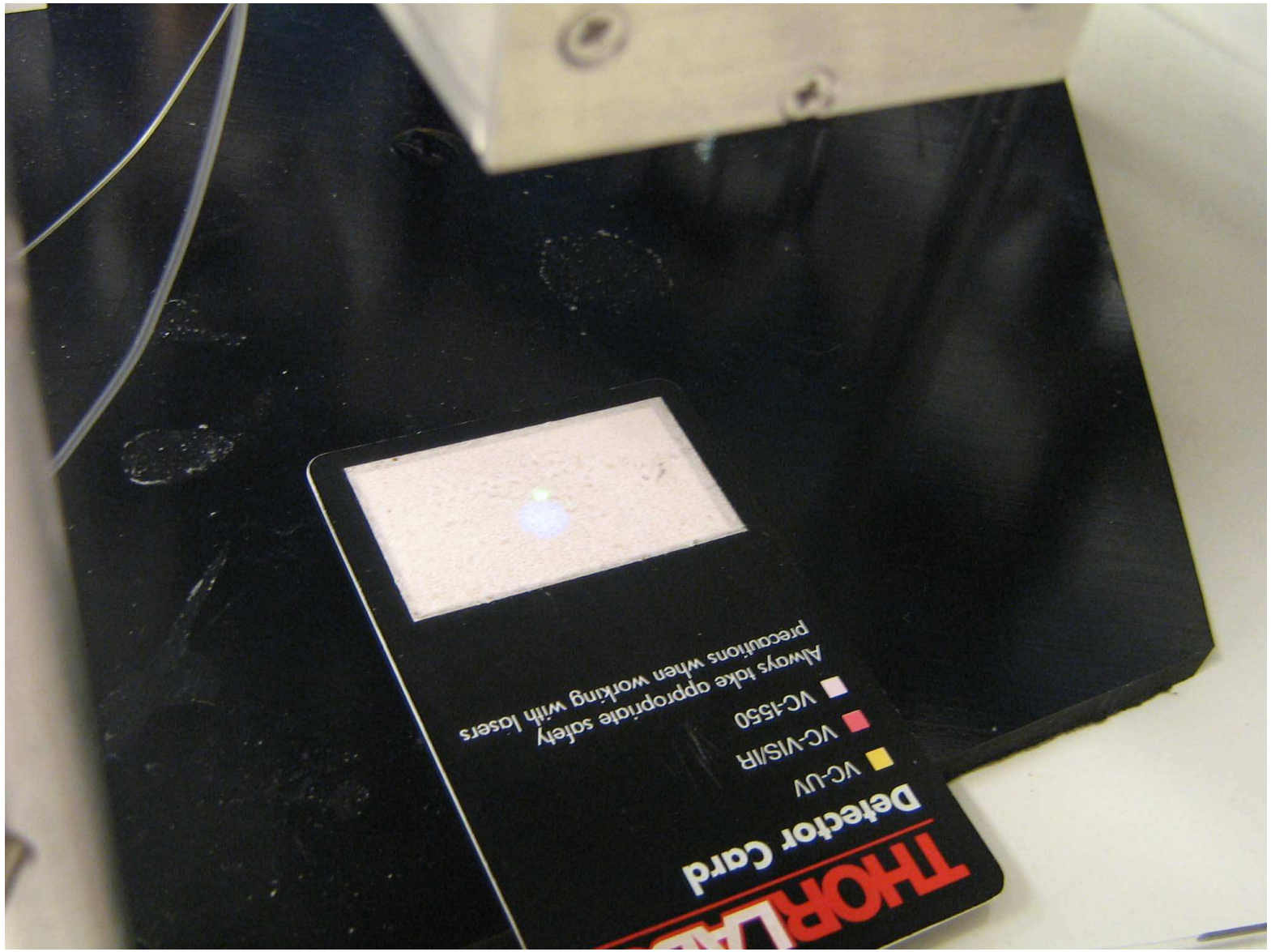


Plug fiber back into laser. Be careful not to get end of fiber dirty by touching center of ferule to side of hole.

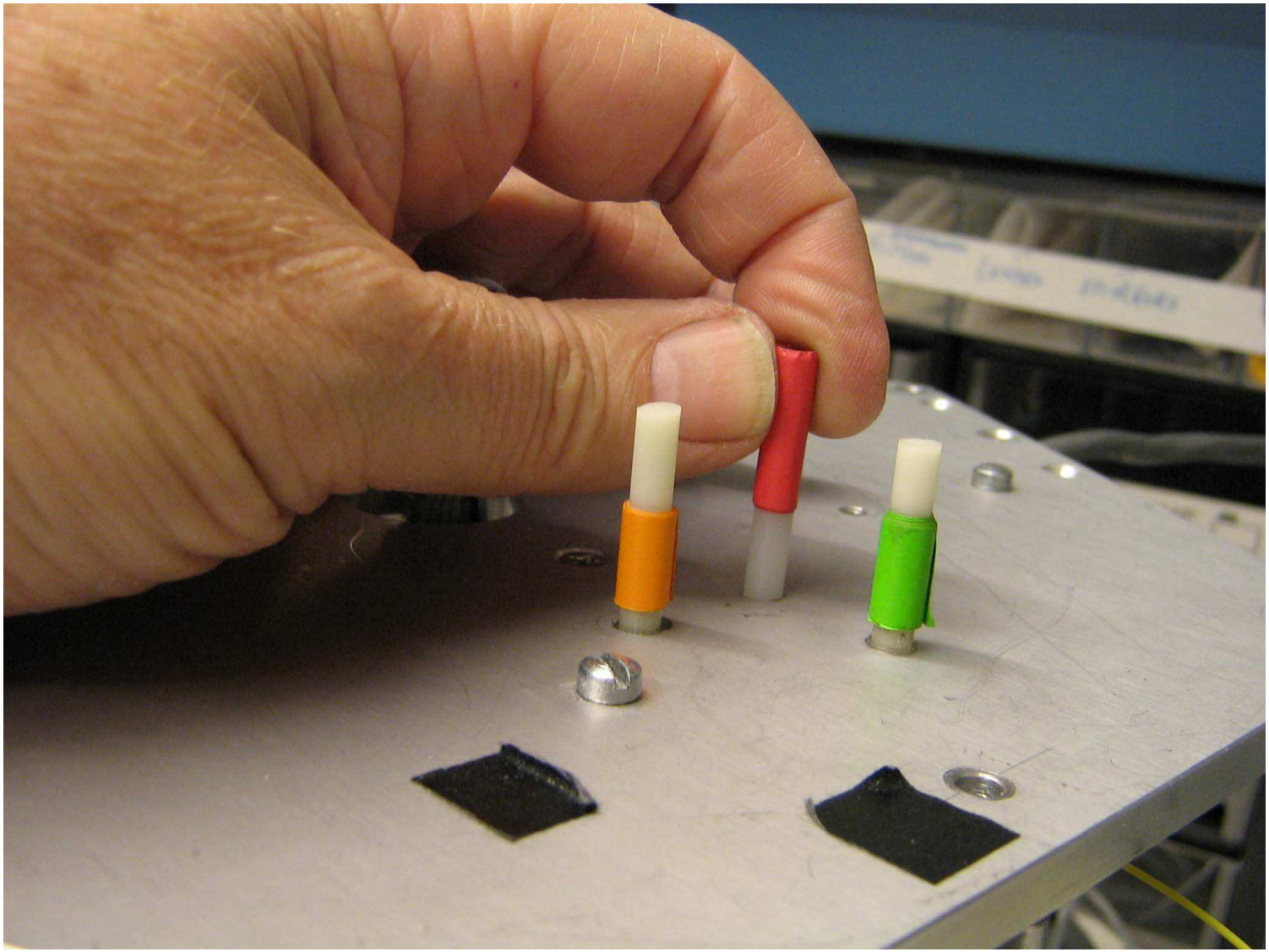


Select power monitor function. Before connecting fiber, set power to ~20% of normal operating power (here shown as “20”). Plug fiber into laser outlet. Power monitor should drop somewhat when reflection from laser output is reduced by coupling to wiggler fiber (here dropped to “17” in right laser).

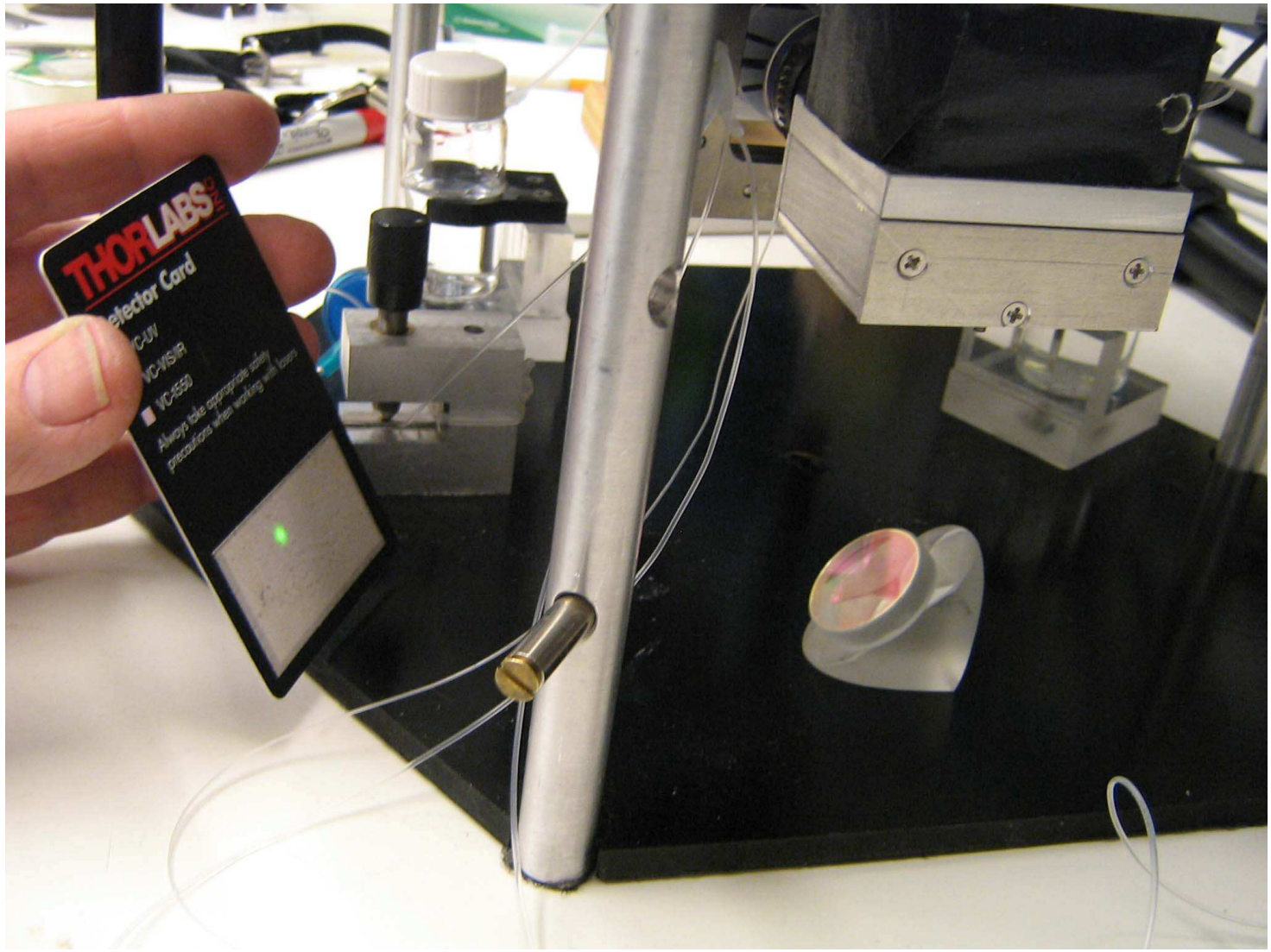
Find output beam with indicator card



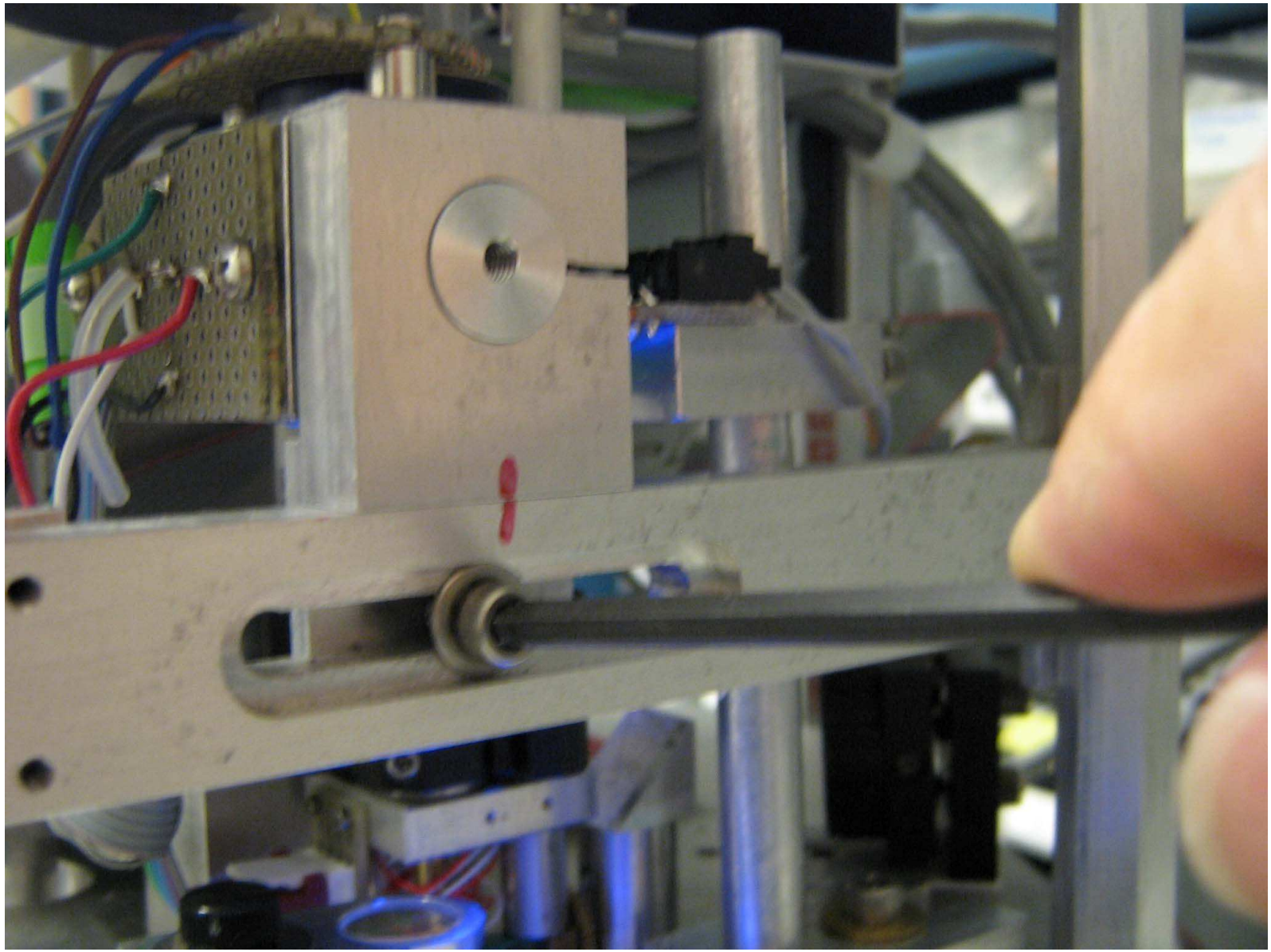
Turn 3 screws CW to move fiber down toward lens.



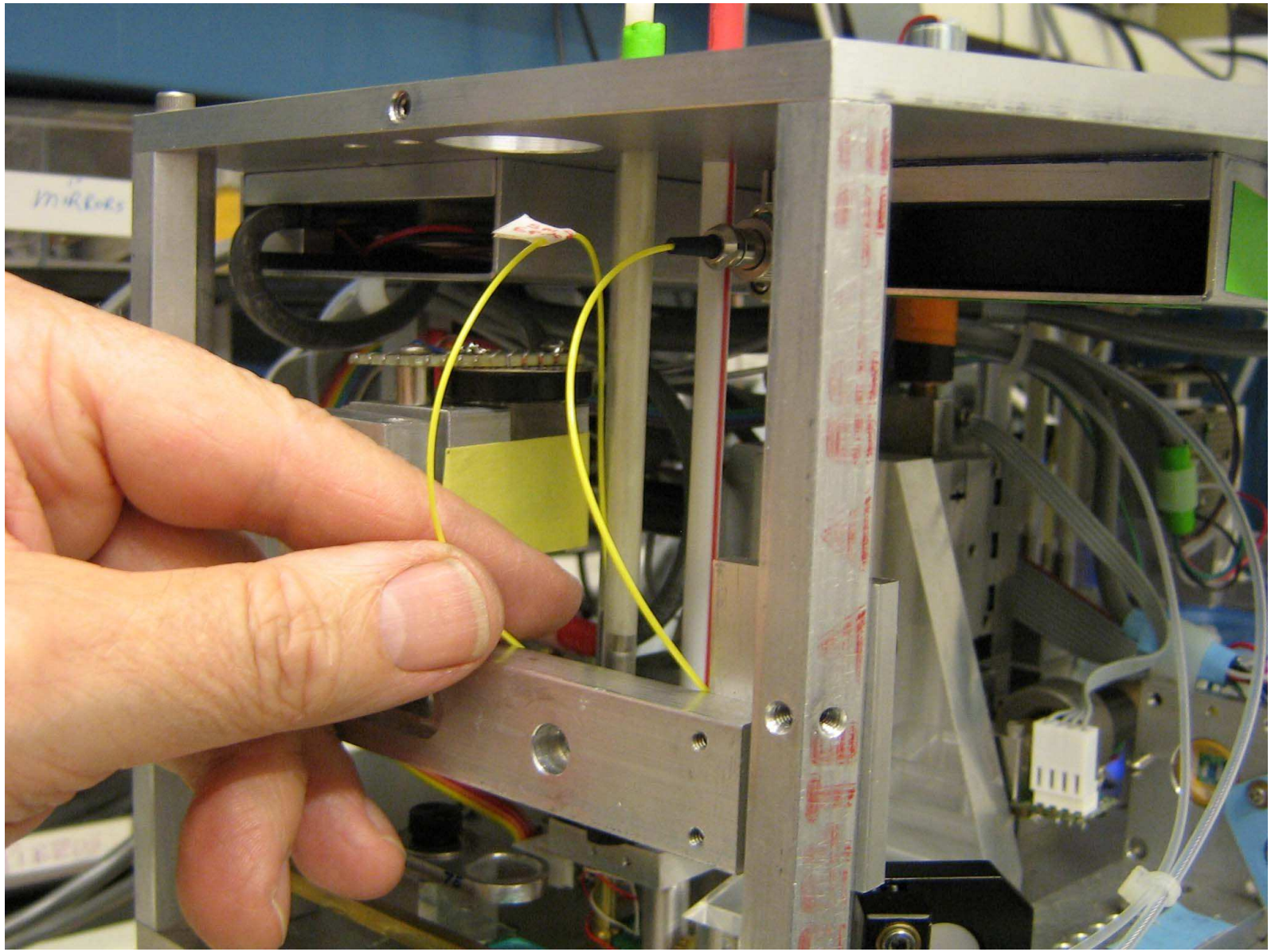
Follow spot with card, collimate beam by turning 3 screws (including red knob in corner) until spot does not change size with card position.



Put detector back into center position

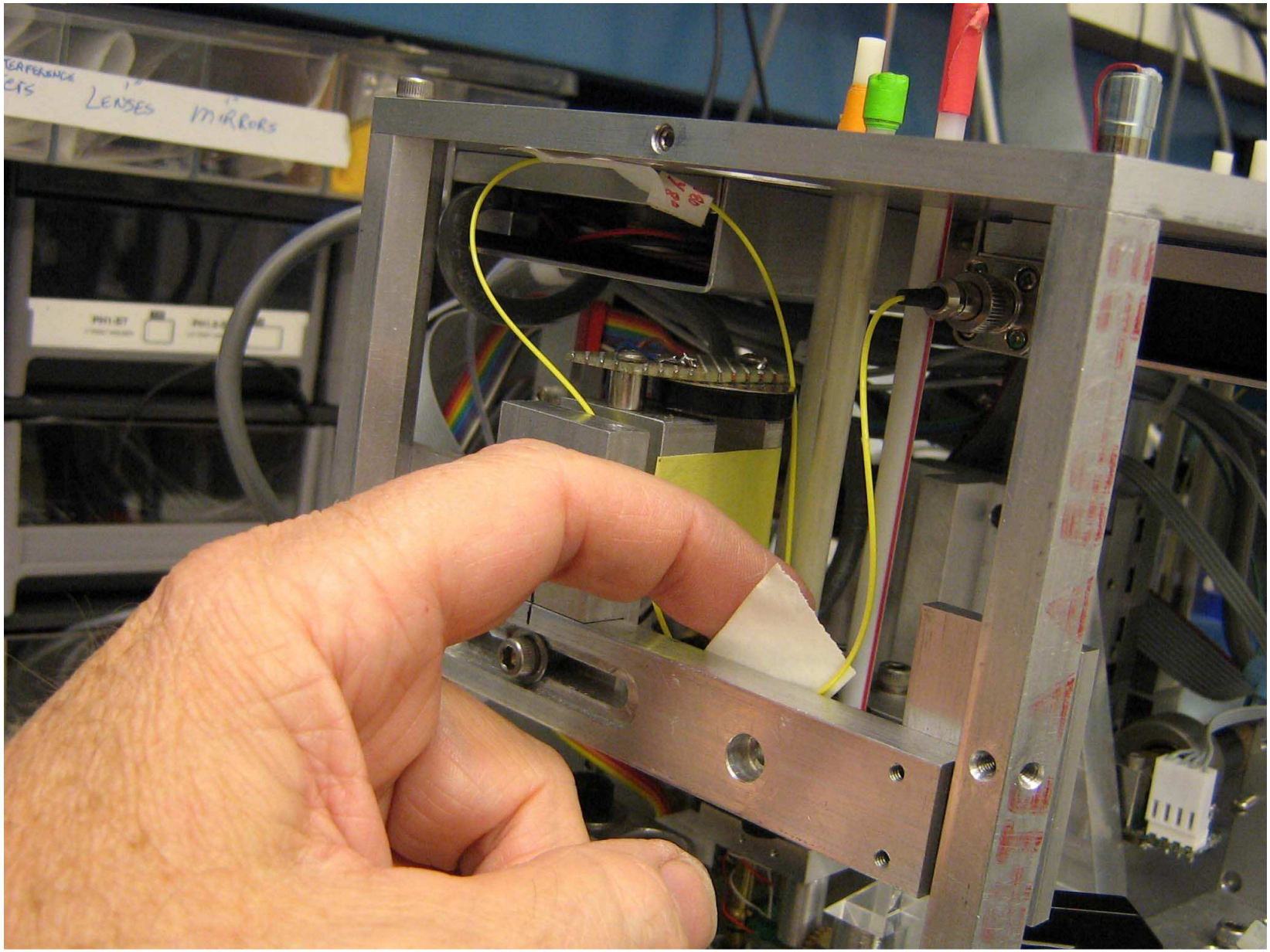


Bending fiber changes polarization at fiber output which changes power through polarizing beam-splitter cube



Adjust fiber bends to give maximum light to detector. But first have water/chamber in place and laser spots focused on TV screen.

Tape the fiber so it will not move



Reverse previous steps to re-assemble mini-tweezers

- The End.