

Tail Rotor Drive Shaft Alignment

Alternate Method (Enstrom TH-28/480 Series Maintenance Manual Section 11-61 and Enstrom F-28F/280F Series Maintenance Manual Section 10-6)

This alternate method uses calipers in place of the gauge block (P/N T-0143-9 for turbine helicopters, P/N T-2656 for piston helicopters) to align the trail rotor drive shaft in accordance with section 11-61 and 10-6 in both the TH28/480 and F28F/280F series maintenance manuals.

- A. Remove the aft tail rotor drive shaft cover and open remaining covers.
- B. Install the tail drive shaft alignment tools (Turbine Helicopters: T-0143, Piston Helicopters: T-0088) on the forward end of the short shaft and the aft end of the long shaft. Attach the piano wire to the tools and position the piano wire vertically with the center line of the drive shafts. (Figure 11-13)
- C. Verify the alignment tool heights are within $\pm .001$ inches at the forward and aft positions using the following method.

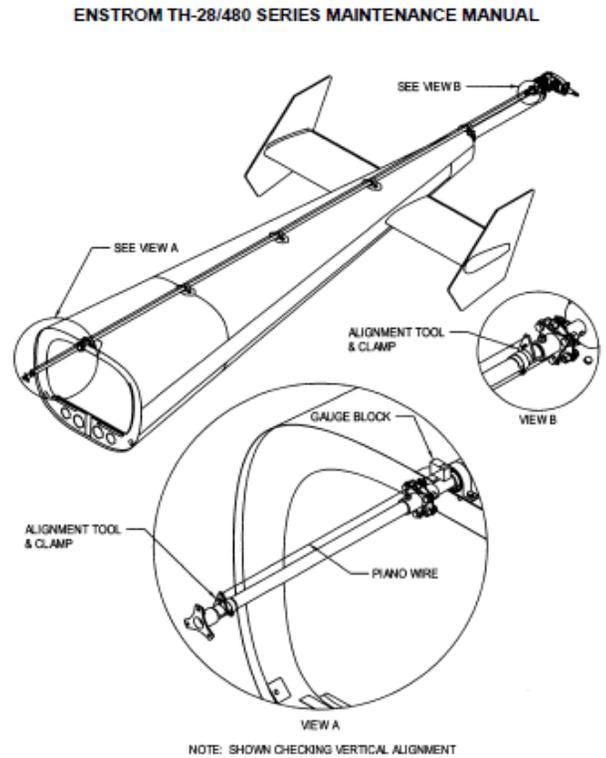
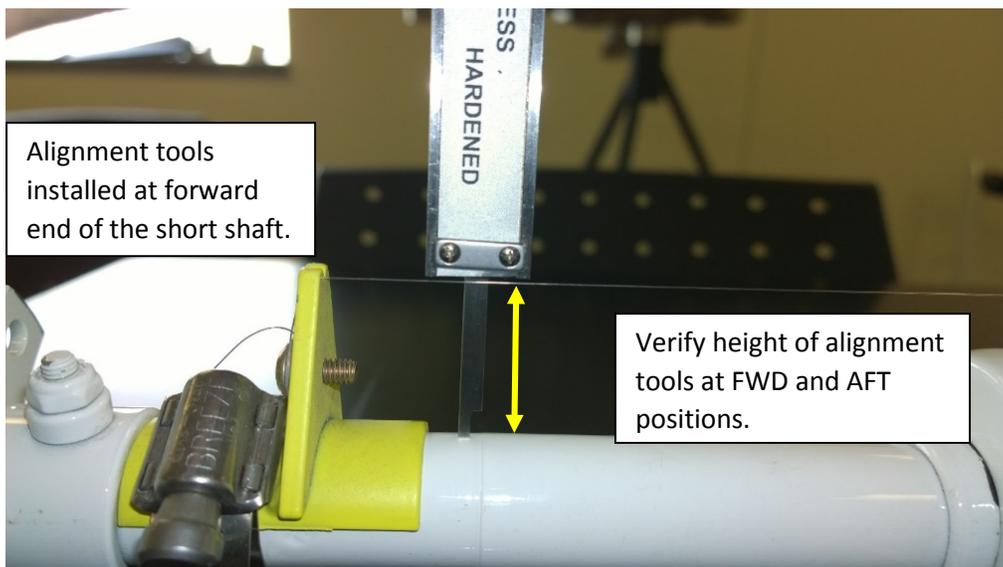


Figure 11-13. Tail Rotor Drive Shaft Alignment





- a. Using a set of calipers measure the distance between the wire and short shaft approximately 1 inch aft of the forward alignment tool.
 - b. Measure the distance between the wire and the long shaft 1 inch forward of the aft alignment tool.
 - c. The difference between the two previous measurements should be no greater than .002 inches.
- D. If alignment tool heights are outside allowable limits it will be necessary to file the high/tall alignment tool saddle (the location where the piano wire rests in the alignment tool) to obtain the proper height.
- a. Filing may be accomplished by using small file.
 - b. File the saddle and measure per paragraph C until the proper tolerance of $\pm .001$ inches is obtained.
- E. Starting at the forward drive shaft bearing assembly, measure the distance between the drive shaft and the piano wire. Repeat this for the remaining drive shaft bearing assemblies. The vertical difference at any position should be within $\pm .012$. If the difference is greater than $\pm .012$ add or subtract shims under the bearing assembly to bring the shaft into proper alignment. Torque the hardware and recheck the alignment after each adjustment.
- a. For turbine helicopters refer to Enstrom TH-28/480 maintenance manual, section 11-61, paragraph C and D for shimming procedures.
 - b. For piston helicopters refer to Enstrom F28F/280F maintenance manual, section 10-6, paragraph L (2) for shimming procedures.
- F. When proper vertical alignment is achieved, rotate the tail rotor drive shafts 90° to check lateral alignment.
- G. Starting at the forward drive shaft bearing assembly, measure the distance between the drive shaft and the piano wire. Repeat this for the remaining drive shaft bearing assemblies. The lateral difference at any position should be within $\pm .012$. If the difference is greater than $\pm .012$,

Note

If the alignment tools differ in height greater than allowable it is not possible to obtain proper alignment of the tail rotor drive shaft

Note

Insure tail rotor drive shaft bearing hardware is properly torqued before taking measurements and after each adjustment.



loosen the bearing assembly hardware and shift the position of the bearing assembly. Torque the hardware and recheck the alignment after each adjustment.

- a. For turbine helicopters refer to Enstrom TH-28/480 maintenance manual, section 11-61, paragraph F and G for lateral shift procedures.
 - b. For piston helicopters refer to Enstrom F28F/280F maintenance manual, section 10-6, paragraph L (3) for lateral shift procedures.
- H. Continue alignment procedure for turbine helicopters per Enstrom TH-28/480 maintenance manual, section 11-61, paragraph H through M.