ROYAL CANADIAN AIR FORCE

DESCRIPTION AND MAINTENANCE INSTRUCTIONS INSPECTION AND LUBRICATION OF TACHOMETER SHAFTS

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INSPECTION AND LUBRICATION OF TACHOMETER SHAFTS

1 To prevent excessive wear and reduce the number of failures of tachometer shafts, the tachometer shaft installations on aircraft will be carefully inspected in accordance with the instructions in paragraph 2 at the next 50-hour inspection period of the aircraft. Thereafter, the shafts will be disassembled, inspected for wear and defects, and relubricated only at the time of each engine change unless local conditions warrant more frequent action.

INSPECTION AND LUBRICATION

2 The inspection and lubrication of tachometer shafts will be accomplished as follows:

(a) Disconnect both ends of the tachometer shaft. (See figure 1.)

(b) Remove the washer at the engine end, and pull inner shaft out of the casing from the instrument end.

(c) Inspect both the inner shaft and the casing for wear and corrosion, and replace with a complete assembly if either part is found to be excessively worn.

(d) Lubricate shaft with a light coat of low temperature grease, 3-GP-641, prior to reinstallation in the casing. (See figure 4.)

(e) Reinstall the washer on the shaft. (See figure 5.)

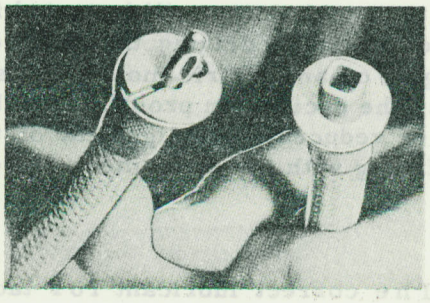

Figure 1 Ends of Tachometer Shaft

NOTE

This washer assists in holding the shaft in the casing during handling procedures prior to installation of the shaft assembly and is not of material value to the assembly after it has been installed. Therefore, in the event that a replacement washer is not available it may be left off the shaft entirely.

(f) Paint a yellow dot approximately 3/16 inch in diameter in a conspicuous place on each end fitting of all shafts lubricated with 3-GP-641 grease. This dot indicates that the shaft is suitable for use in Arctic weather. (See figure 6.)

3 Care will be taken in handling and installing the assembled drive shaft and casing, as these parts are susceptible to damage through improper handling. Such damage may not be apparent under a casual visual examination but usually will show up after installation by causing excessive oscillation of the tachometer pointer or excessive wear. At no time should a tachometer shaft assembly be bent in an arc with a radius of less than 6 inches.

(a) When installing or handling, the shaft and casing should not be subjected to an end pull of more than 15 pounds.

(b) The shaft will be installed so that all bends are in as large a radius as possible and in no case less than a 6-inch radius at any point.

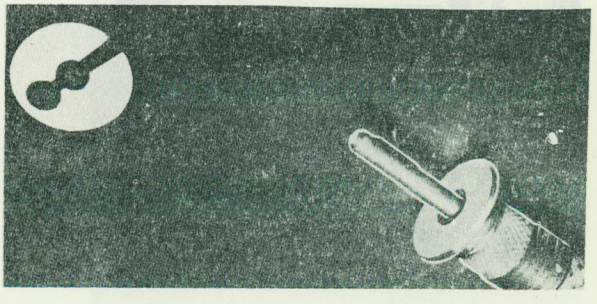

Figure 2 View Showing Washer Removed

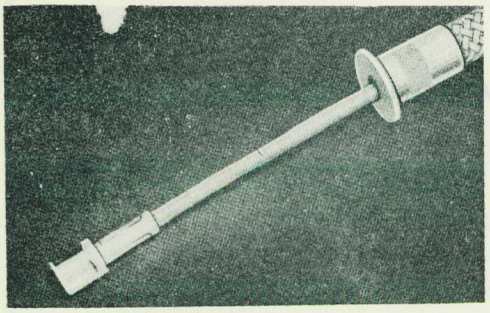

Figure 3 View Showing Shaft Partly Removed

Figure 4 Shaft and Proper Grease for Lubrication

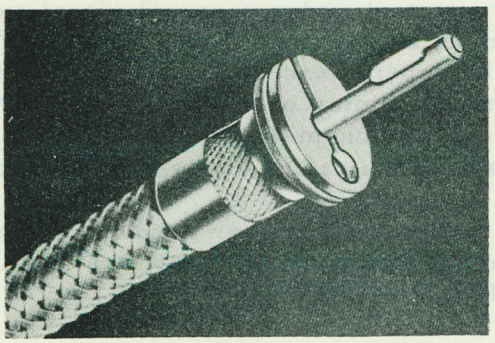

Figure 5 Washer Installed

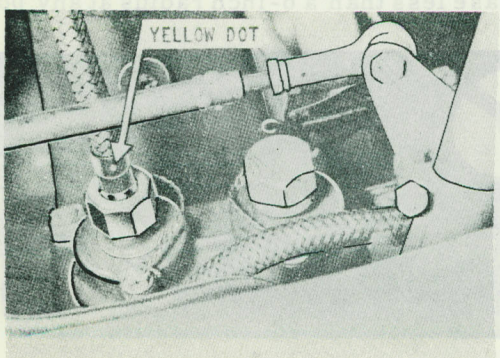

Figure 6 Location of Yellow Dot

(See figure 7.) The amount of protrusion of the shaft from the casing will vary with the number of bends in the casing combination. As the number of bends is increased, the protrusion is increased.

(c) When completely installed, the key end of the drive shaft should protrude beyond the face of the casing end not less than 9/16 inch nor more than 1-1/4 inches. If protrusion is less than 9/16 inch, the casing has been subjected to excessive end pull. This condition usually can be corrected by removing the shaft and casing assembly, recoiling in approximately 18-inch diameter, and reinstalling. If protrusion is more than 1-1/4 inches, the casing may be lengthened by flexing and pulling along its length to eliminate small bends and kinks. If further adjustment is necessary, twist slightly in clockwise or counterclockwise direction.

(d) The tachometer shaft casing will be secured to the aircraft structure at frequent intervals to prevent vibration of whipping. After the shaft is in place and secured, and before connecting to the engine and tachometer, it will be tested to see that it rotates freely.

(e) After the test for free rotation of the shaft with both ends disconnected, the instrument end of the shaft will be connected securely to the tachometer and again tested for free rotation of the shaft by turning the shaft from the engine drive end. If the shaft binds, the difficulty is probably due to misalignment of the shaft drive fittings with the instrument drive fitting as shown in Figure 8. The difficulty will be corrected by loosening the connection nut and realigning the shaft.

(f) The tachometer will be tested for pointer oscillation by driving the shaft either by the engine or an electric motor. If oscillation occurs, the oscillation probably can be eliminated or reduced by realignment of the shaft drive fitting with the instrument drive fitting.

4 The correct lubricant for tachometer shaft is grease CGSB spec. 3-GP-641 (RCAF 34A/7).

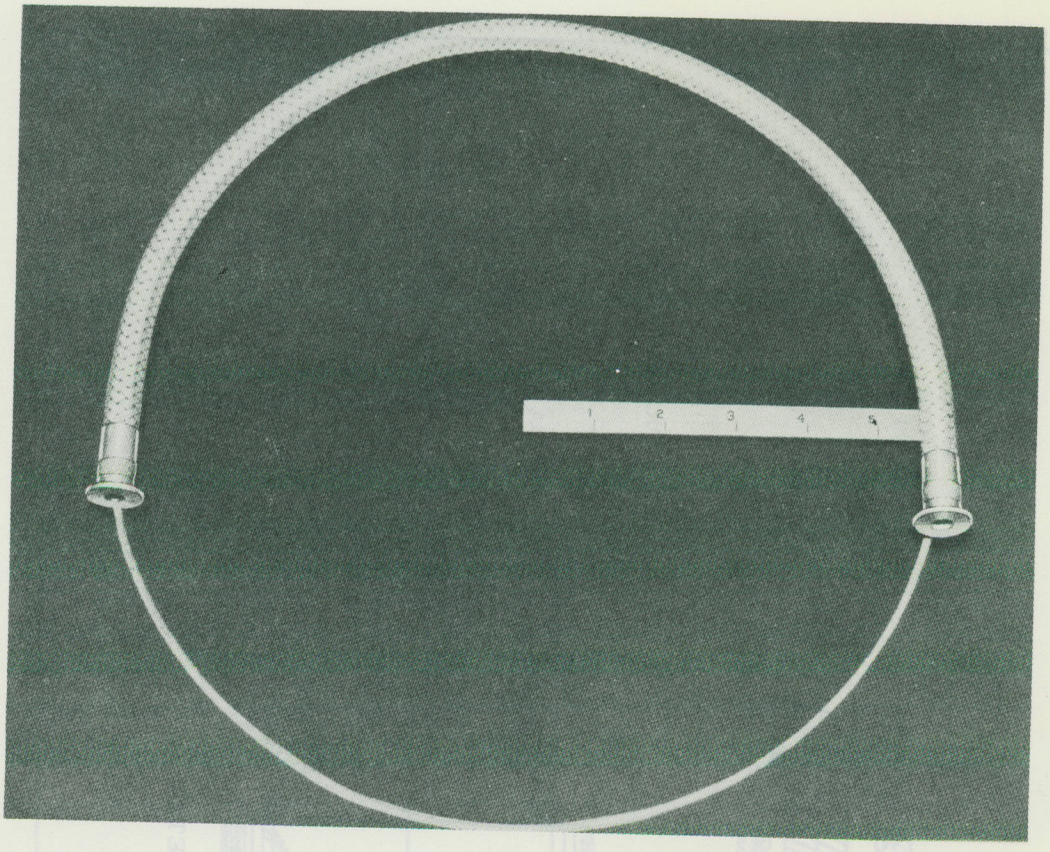

Figure 7 Minimum Radius of Bends

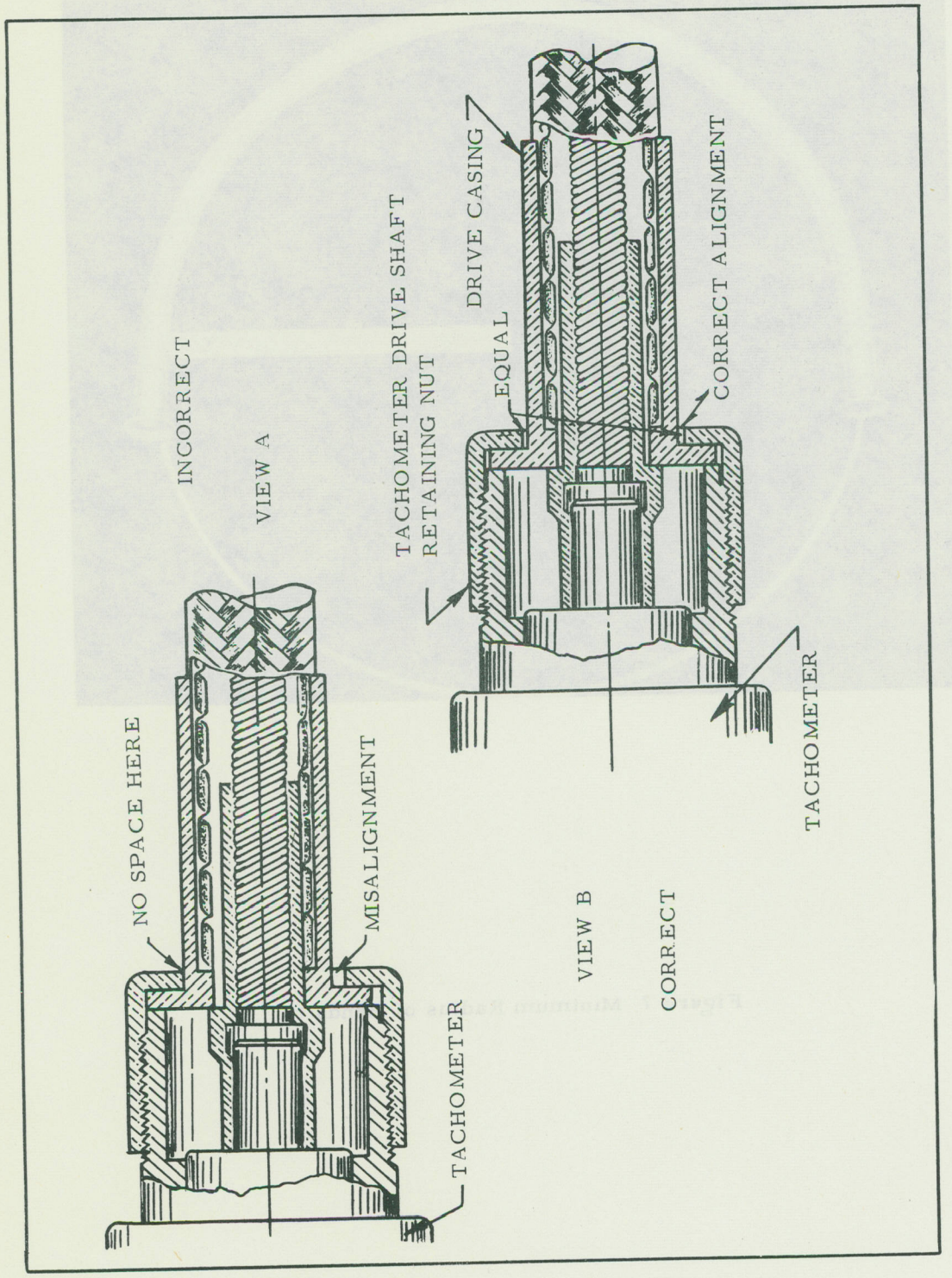

Figure 8 Proper Aligning of Shaft