

1. SCOPE:

This SAE Aerospace Recommended Practice (ARP) provides guidance for the design of flanges on temperature sensors intended for use in gas turbine engines. Three figures detail the configuration of standard size flange mounts with bolt holes, slotted flanges, and miniaturized flanges for small probes.

2. REFERENCES:

There are no referenced publications specified herein.

3. This document supersedes and cancels ARP465 and ARP466, issued 2-15-58.
4. Flanges described in this document are used for mounting temperature sensing probes in gas turbine engines. The probes are welded or brazed to the flange for positive support. The flanges are bolted or secured by nuts and studs to mounting bosses located on the engine case. This arrangement permits removal of the probes for service, test and replacement, if necessary.
5. Figure 1 illustrates the standard size flange mounts with bolt holes. "a" applies when the terminal mounting shell is round, and "b" when the shell is square or rectangular.
6. Figure 2 shows slotted flanges for use with rectangular shouldered studs, providing for the use of lock nuts which eliminates the need for safety wire.

Figure 3 shows the miniaturized flange suitable for applications where short, small diameter probes are used.

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7. The advantages of flanges are:
 - a. Low cost in large quantities, since they are readily produced by stamping.
 - b. Use of flange mount, with .0625 offset, facilitates orientation of probes (when probes are separable from harness).
8. A gasket between the flange and mounting boss is sometimes needed for sealing internal pressures. Sealing difficulty may be experienced if the internal pressure is greater than four atmospheres.
9. The following notes apply to Figures 1, 2, and 3:
 - a. Flange faces to be flat within .010 FIR.
 - b. Surface texture USAS B46.1 unless otherwise specified surfaces to be $\sqrt{125}$.
 - c. Break sharp edges .003 to .015 unless otherwise specified.
 - d. Stamping rollover (deformation at edge of stamping due to shearing action of die) to be .005 maximum.
 - e. Dimensions in inches, unless otherwise specified. Tolerances: Linear dimension $\pm .010$.

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