WARRANTY INFORMATION

Alcor©, Inc. warrants all parts in all new Alcor©, Inc. products to be free from defects in material and workmanship under normal use and under the following conditions: Alcor©, Inc.‘s obligation under this warranty is limited to the repair or exchange of any defective part, if the part is returned and return shipping prepaid, within FIVE YEARS of the date of manufacture for grounded thermocouples and within ONE YEAR of the date of manufacture for ungrounded thermocouples.

Alcor©, Inc. is not responsible for any service charges, including removal and reinstallation costs, or any other consequential damages. This warranty is void as to any product damaged as a result of misuse, accident, negligence, unauthorized repairs or handling in transit. If the Alcor©, Inc. product’s serial number or inspection date label has been altered, the warranty is void.

Questions concerning all Alcor©, Inc.’s products should be directed to Customer Support at 1-800-FLI-SAFE (1-800-354-7233) or email: support@alcorinc.com.

FAA-PMA/STC SA 522
SW: This product is FAA approved for installation on ALL piston engine aircraft. After installation of complete system, return aircraft to service via Form 337 referencing STC SA 522 SW. This is not required for replacement parts. All piston powered aircraft, regardless of make, are covered by this STC.

EGT Probe
Installation Instructions
FAA/PMA Approved

NEW 2008 WARRANTY

Web site: www.alcorinc.com
E-Mail: support@alcorinc.com
GENERAL INFORMATION
When replacing a thermocouple ensure replacement is same type as one removed by ensuring part number/wire colors match. If stagger does not match use stagger adapter P/N 42523. In a new installation, make sure the location on a single probe (thermocouple) Exhaust Gas Temperature system is in the exhaust pipe of the cylinder that is leanest during full throttle. Particularly in carbureted engines, the leanest cylinder can change when throttle, altitude, carburetor heat, and/or ambient air temperature changes. The leanest cylinder is the one that reaches peak first when leaning from full rich, which is sometimes the cylinder with the highest EGT. Additional information on mixture management can be found in Alcor®’s publication EGT Combustion Analysis in a Nutshell and Lycoming Service Bulletin 1094D, and Continental Service Bulletin M89-18. The probe should be located a minimum of 2 inches from the cylinder exhaust port flange (5 inches for highly supercharged engines) in an area free from weld beads or pipe irregularities. If the pipe has a longitudinal weld bead, orient the clamp so that the bead does not interfere with flush fit of shoulder of flange at base of probe tip (gas seal). Determine the location that will allow probe and wire to be free from interference with spark plugs, baffling, cowling, exhaust and other components. For screw-in type Alcor® probes use weld boss, P/N 28113 located the same distance as clamp style probes or 3-5 inches from the turbocharger inlet in Turbine Inlet Temperature sensing applications. All work to be done in accordance with FAA, Advisory Circular 43.13-1B or later revision.

INSTALLATION, CLAMP TYPE
1. For new installations carefully drill a hole at selected location using a #31 (0.120 inch/3.05mm) or #32 (0.116 inch/2.95mm) drill. If available, carefully ream hole using #30 (0.1285 inch/3.26mm) drill. The correct hole size and alignment assures a press fit of probe element shoulder to prevent exhaust gas leakage.

2. Open clamp and place around exhaust pipe ensuring correct orientation of clamp tightening screw. Place probe tip into hole and tighten clamp to remove looseness.

3. While probe element is perpendicular to exhaust carefully push and rotate probe to fully seat element shoulder to exhaust pipe. If necessary use a small wooden dowel and light hammer or other suitable tool to tightly tap clamp at junction of probe body to seat probe shoulder.

4. Torque clamp to 30-35 inch pounds and cut off excess clamp and deburr. To ensure clamp does not loosen during operation it may be safety wired from the end of slotted clamp tab to body of probe or slot in screw may be safety wired to screw housing.

5. Slide fiberglass insulation sleeve over lead. Connect instrument lead to probe lead with screws and nuts ensuring correct stagger/color combinations. Slide sleeve over lead connection and secure with nylon ties.

6. Allow enough slack in probe lead to provide a finger-sized loop (see Figure 1) to minimize strain on wire and secure remainder of lead to engine/airframe away from exhaust pipe.

INSTALLATION, SCREW-IN TYPE
1. For new installations, carefully drill a hole at selected location using a #30 drill. Insert probe into weld boss and hand tighten. Insert probe tip into drilled hole and tack weld boss. Remove probe and weld boss to exhaust pipe.

2. Drill a .125 inch hole through the exhaust pipe at the center of the boss the taking care not to damage internal threads in boss.

3. Insert element into exhaust no deeper than .75 inch (see Figure 2). OPTIONAL- lubricate probe threads with high temperature lubricant (2000°F).

4. Tighten probe nut finger tight, then with appropriate sized wrench tighten an additional 3/4 turn or till snugly locked in place.

Follow steps 5 and 6 above to complete installation.

FREQUENTLY ASKED QUESTIONS
On a new single probe installation, which cylinder do I install the thermocouple on?

This would be the cylinder where the temperature peaks first while leaning. Not all engines, even of the same make and model, will peak the same due to differences in internal airflow characteristics, carburation, injection, etc. A worst case scenario would be installing the probe on the richest running cylinder (peaks last) where lean misfire would be reached before peak while leaning.

I installed a new probe and the meter is still dead or went dead again after being in operation for awhile?

First make sure that the correct type of probe was installed by verifying color code matches lead and meter (Type K, Red/Yellow, or Type E, Red/Brown). If that checks all right then disconnect the lead from the meter and measure the loop resistance of the lead and probe and compare it with the value marked on the meter label. If the value is approximately the same then the problem is most likely the calibration potentiometer or the movement in the meter. The old probe removed is probably good! Call Alcor for repair of meter.

Is there any way I can test a thermocouple without expensive equipment?

Yes, by using an ALCAL® 2000 EGT/CHT System Tester. If not available then measure the loop resistance (see resistance table) of the probe with a digital multi-meter, if available. While viewing the meter, move probe wire to detect internal wire breaks. If the reading is steady then the probe is probably good. When heated to just turning red, the temperature is about 1550-1650°F.

<table>
<thead>
<tr>
<th>Alcor® Type</th>
<th>P/N Type</th>
<th>Color</th>
<th>Resistance @ 70°F</th>
<th>Millivolts at 1550-1650°F</th>
<th>Weight</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Clamp</td>
<td>K</td>
<td>Red/Yellow</td>
<td>.6 -1.0 ohm</td>
<td>34.12 - 36.36 mV</td>
<td>.12 lbs</td>
<td>3.25 max dia.</td>
</tr>
<tr>
<td>All Screw-in</td>
<td>K</td>
<td>Red/Yellow</td>
<td>.6 -1.0 ohm</td>
<td>34.12 - 36.36 mV</td>
<td>.12 lbs</td>
<td>call</td>
</tr>
<tr>
<td>All Clamp</td>
<td>E</td>
<td>Red/Brown</td>
<td>.7 -1.0 ohm</td>
<td>63.04 - 67.33 mV</td>
<td>.12 lbs</td>
<td>3.25 max dia.</td>
</tr>
<tr>
<td>All Screw-in</td>
<td>E</td>
<td>Red/Brown</td>
<td>.8 -1.1 ohms</td>
<td>63.04 - 67.33 mV</td>
<td>.12 lbs</td>
<td>call</td>
</tr>
</tbody>
</table>

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