

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 (see below). This is not required for replacement parts. All piston powered aircraft, regardless of make, are covered by this STC.



United States of America
Department of Transportation
Federal Aviation Administration
Supplemental Type Certificate

Number: SA522SW

This certificate issued to: Alcor LLC
300 Breesport St.
San Antonio, TX 78216

Certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23 of the Federal Aviation Regulations*

Original Product: See Limitations and Conditions
Type Certificate Number: See Limitations and Conditions
Make: See Limitations and Conditions

Description of Type Design Change: Model: See Limitations and Conditions

Installation of Exhaust Gas Temperature (EGT), Cylinder Head temperature CHT
Components/Systems in accordance with Master Drawing List titled "Alcor Master Drawing List
for STC SA522SW dated November 14, 1984, " or later FAA approved revisions.

Limitations and Conditions:

All aircraft equipped with reciprocating engines are eligible for the installation of the Alcor EGT
and CHT Component/Systems.

(See Continuation Sheet 3 of 3)

This certificate and the supporting data which is the basis for approval must remain in effect until
surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the
Federal Aviation Administration.

Date of Application: 04/15/1965 Date Reissued: 07/05/1994 09/30/2002 05/27/2025

Date of Issuance: 05/26/1965 Date Amended: 04/30/1992

see continuation sheet for additional dates

By Direction of the Administrator

Signature: Roy E Boffo III
Date: 2025.06.17 06:11:07 -05'00'

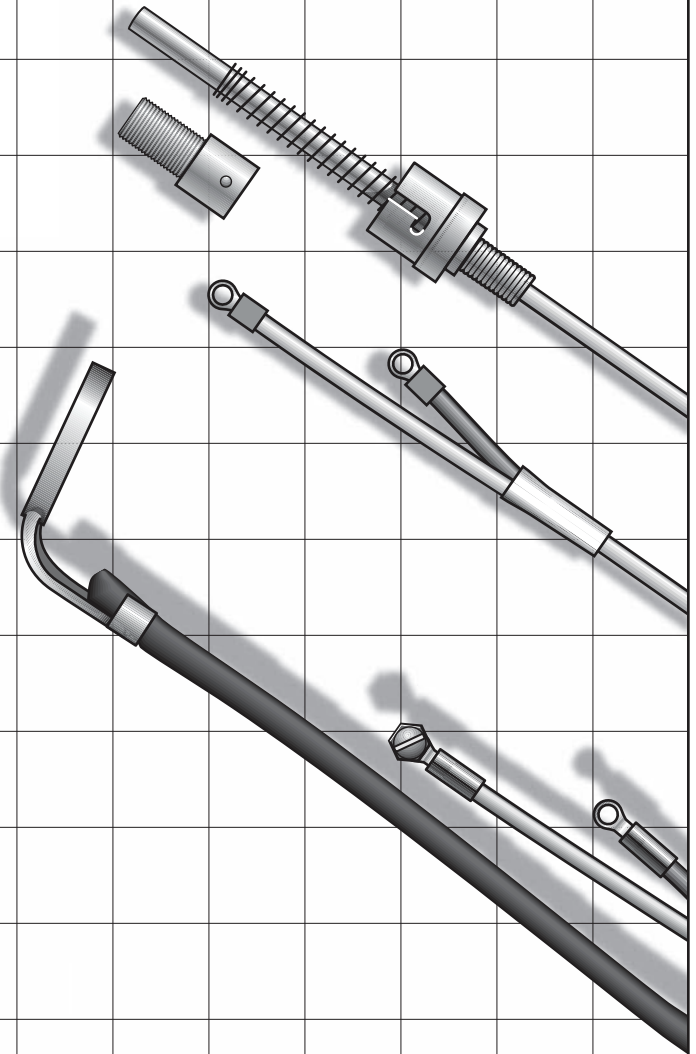
for Paul Nguyen
Title: Manager, Central Certification Branch
Compliance & Airworthiness Division
Aircraft Certification Service

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120).

CHT Probe

Installation Instructions

FAA/PMA Approved



Web site: www.alcoraero.com
E-Mail: support@alcoraero.com

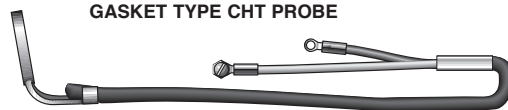
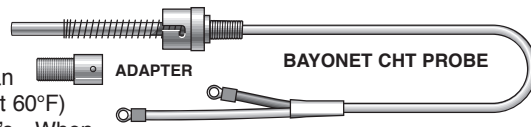


GENERAL INFORMATION

Gasket style Cylinder Head

Temperature thermocouples can read 50°F to 100°F (normally about 60°F) more than bayonet style CHT's. When

replacing an existing CHT probe (thermocouple) the same cylinder should be used from where the old probe was removed. Some engines do not have thermowells to install bayonet probes so gasket types must be used. In cold climates, thermowells are sometimes used for heater installations. Spring loaded bayonet types are more accurate than simple screw in types because the probe touches the bottom of the thermowell and senses metal rather than air temperature. If installing a new single probe system the original system must be left intact unless a FAA 337 form is completed to approve its removal. Ensure that the probe installed is the same type as the one removed by comparing color of wires. Some competitor's probes use red and white colored wires, which are the same as yellow and black wires. Do not confuse thermocouples with thermistors. Thermocouples produce millivolts, while thermistors change resistance. All work to be done in accordance with FAA, Advisory Circular 43.13-1A.



INSTALLATION, BAYONET TYPE

1. If replacing an existing probe, remove by turning bayonet cap a quarter turn counter-clockwise by hand and carefully pull. If the probe being removed is not a bayonet type, unscrew with an open end wrench.
2. Install Adapter, P/N 28202, if none exists. Fully insert replacement bayonet probe into thermowell, aligning locking pin with cap slot. Push and turn cap clockwise to lock.
3. 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.
4. Allow enough slack in probe lead to provide a finger-size loop to minimize strain on wire and secure remainder of lead to engine/airframe away from exhaust pipe.

Alcor® P/N	Type	Color	Resistance	Millivolts @ 212°F	Weight	Size
86251	J, Iron/Constantan	Yellow/Black	.24 ohms	4.04 mv	1.25oz	15"
86252	K, Chromel/Alumel	Red/Yellow	.66 ohms	3.14 mv	1.25oz	15"
28202	Thermowell Adapter				.3oz	3/8-24(NS.2)

INSTALLATION, GASKET TYPE

1. Remove sparkplug and copper gasket or defective thermocouple if installed. Dispose of old copper gasket. Lubricate sparkplug threads as recommended by manufacturer and slide new gasket thermocouple over sparkplug threads.
2. Replace sparkplug and tighten to manufacturer's specifications after thermocouple leads are routed in the correct direction. See operations #3 and #4 above to complete installation.

Alcor® P/N	Type	Resistance	Millivolts @ 212°F	Weight	Size
86202	J, Iron/Constantan	.13 ohms	4.04 mv	1.25oz	18mm

FREQUENTLY ASKED QUESTIONS

On a new installation, which cylinder should I install the probe on?

Install the probe in the same location as factory-installed system, or rear cylinder on horizontally opposed engines, or #1 cylinder on radial engines. If unsure, make several similar test flights changing thermocouple locations between flights to select the hottest cylinder. That cylinder should remain the hottest unless airflow is altered because of cooling airflow problems such as air baffling leaks, etc. or cylinder runs excessively lean.

How can I check my probe to see if it's working correctly?

Use an **Alcor® ALCAL® 3000 EGT/CHT Tester**. Otherwise, place the probe in boiling water and either read the **Alcor®** meter temperature (200° at first mark) or measure millivolt output and compare with table value listed on opposite page.

What am I to do if I have replaced the probe/thermocouple and I still do not get an indication on the meter?

Inspect entire system for loose connections, broken wires/connectors, or mismatched color-codes between lead/meter and probe. Disconnect meter from lead and check the loop resistance of the lead and probe and compare with value on meter label. Use cigarette lighter or soldering iron to heat probe and check for reading on meter. Use boiling water for accurate check at first meter mark. If you obtain no indication and lead/probe resistance and type are correct, then you may have a bad calibration potentiometer or damaged meter movement. Call **Alcor®** for repair.

WARRANTY INFORMATION

ALCOR LLC warrants all parts in all new **Alcor LLC** products to be free from defects in material and workmanship under normal use and under the following conditions: **Alcor LLC'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.

Alcor LLC 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 LLC product's serial number or inspection date label has been altered, the warranty is void.

Questions concerning all **Alcor LLC's** products should be directed to Customer Support at **1-800-FLI-SAFE (1-800-354-7233)** or email: **support@alcoraero.com**.