

Service Instruction

Issue / Date: SI CG 651-1002, Rev. 1 / December 10, 2025

Subject: Cooling system modification for use of coolant type G40


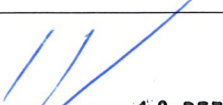
Type affected: Piper PA-28 with TAE 125-02 engine

Models affected: All

Classification: Category SI – SERVICE INSTRUCTION

Time of Compliance: At next scheduled or unscheduled coolant exchange respectively engine replacement

Reason: Modification of the cooling system due to better availability of the coolant type G40 as well as discontinuation of the currently required silicate pouch.
Note: Using coolant type G40 the silicate pouch is no longer required.

Checked 11. DEZ. 2025 S. Reckziegel, CVE 	Approved M. Heinrich, Office of Airworthiness 
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12. DEZ. 2025

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SI CG 651-1002, Initial Issue / November 26, 2025

Correction:

1. Preparation

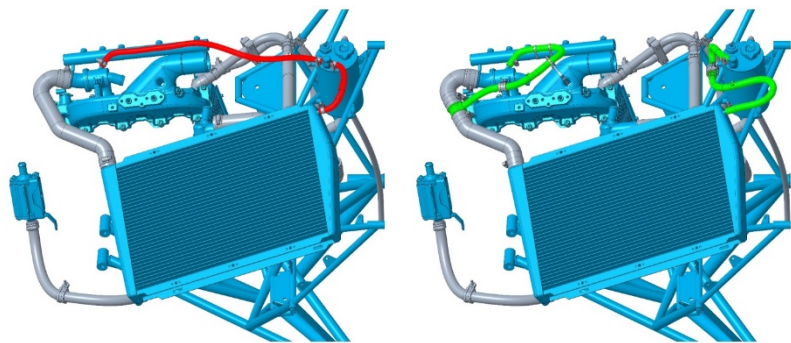
Carry out the following steps in accordance with the original AMM respectively AMM Supplement (AMMS) for the TAE 125-02 installation.

- Disconnect all batteries
- Remove the cowling
- Drain the coolant

2. Removal of the cooling system components

2.1. TAE 125-02-114 installation

- a) Disconnect the sensor wire from the expansion tank.
- b) Remove the vent lines as well as the attaching parts depending on the installation, refer to figure 1. The vent lines marked red indicates the TAE 125-02-114 basic installation and the vent lines marked green indicates the modified installation with additional T-fitting.
- c) In case of the modified cooling system remove the coolant hose between the thermostat and main radiator (incl. T-fitting) also.
- d) Disconnect the bleeder hose from the filler neck and the lower coolant hose from the expansion tank.
- e) Remove the expansion tank.



*Figure 1: Current TAE 125-02-114 installation
[basic piping (left) vs. already modified piping (right)]*

2.2. TAE 125-02-99 installation

- a) Disconnect the sensor wire from the expansion tank.
- b) Remove the vent line between the thermostat and the expansion tank and disconnect the bleeder hose from the filler neck as well as the lower coolant hose from the expansion tank.
- c) Remove the expansion tank.
- d) Remove the plugged hose from the vent connection of the main radiator.

3. Installation of the G40 cooling system components

3.1. TAE 125-02-114 installation

Item	Part Number	Description 1	Description 2	Qty.
---	40-7520-S0009 02	conversion set	expansion tank G40	1
1	40-7520-H0185 01	hose	thermostat	1
2	40-7520-H0186 01	expansion tank	installation set	1
2.1	40-7520-H0025 02	label	coolant	1
2.2	40-7520-H0181 02	expansion tank		1
2.3	NM-0000-02542 01	plain washer	ISO 7089 - 6 - 200 HV - Fe//Zn5//Cn/T0	4
2.4	NM-0000-00110 01	locking screw	M6x10 – 8.8 – A2E	1
2.5	NM-0000-00181 01	hexagon nut	ISO 10511 – M6 – 04 – A2E	2
2.6	NM-0000-00197 01	hexagon head screw	ISO 4017 – M6x20 – 8.8 – A2E	2
2.7	NV-0000-01892 01	acrylic protective laquer		as req.
2.8	NV-0000-01905 01	LOCTITE 243		as req.
3	40-7520-H0122 02	coolant hose	Ø30 – Ø35	1
4	40-7520-H0191 01	hose	vent coolant cooler	1
5	NK-0000-00414 01	hose clamp	ABA 11-17x9 – W1	4
6	NM-0000-00038 01	plain washer	ISO 7089 – 6 – 200 HV – A2E	2
7	NM-0000-00181 01	hexagon nut	ISO 10511 – M6 – 04 – A2E	1
8	NM-0000-02550 01	hexagon head screw	ISO 4017 - M6x25 - 8.8 - Fe//Zn5//Cn/T0	1
9	NM-0000-00410 01	pipe clamp	DIN 3016-RSGU1-15/15 – W1	2
10	NM-0000-01507 01	hose clamp	ABA 32-44x12 – W1	2
11	NK-0000-00184 01	fixing tie with coupler	200x4.6, black	2

Table 1: Parts list for TAE 125-02-114

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- a) Install the expansion tank (item 2.2) using the installation set (item 2). Refer to figure 2 for detailed information.
- b) If necessary, install the coolant hose (item 3) between the thermostat and the radiator using two hose clamps (item 10).
- c) Install the radiator vent line (item 4) between the main radiator and the expansion tank using two clamps (item 5). Attach the vent line to the banjo-bolt connector of the expansion tank. Ensure that the arrow labelled on the vent line points towards the expansion tank.
- d) Attach the vent line (item 1) to the thermostat using a clamp (item 5). The throttle, integrated in the vent line, must be located on thermostat side and the arrow labelled on the vent line must point towards the expansion tank. Refer to figure 3.
- e) Route the thermostat vent line towards the expansion tank and attached it to the engine mount above the welded attaching point for the main radiator support to ensure a U-shaped layout (*lowest point below the expansion tank bottom*). Refer to figure 3. Use two clamps (item 9), two washer (item 6) as well as a screw (item 8) and a nut (item 7) to attach the line.
- f) Additionally secure the vent line with two fixing ties with coupler (item 11). Refer to figure 4
- g) Finally, attach the thermostat vent line to the expansion tank using a clamp (item 5) as well as reconnect the bleeder hose, the lower coolant hose and the sensor wire.

Note: Secure the hoses adequately using cable ties.

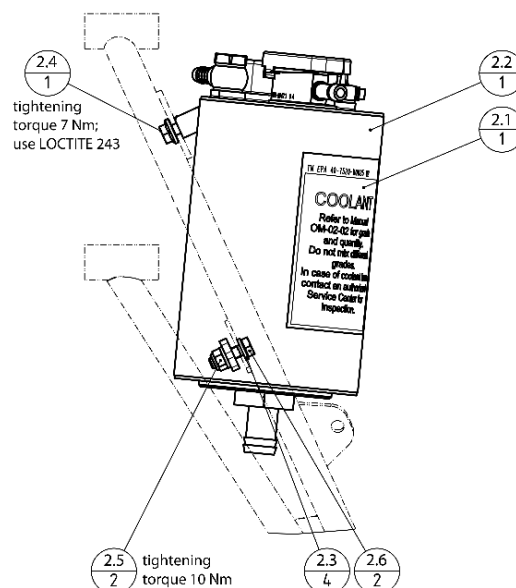


Figure 2: Expansion tank installation

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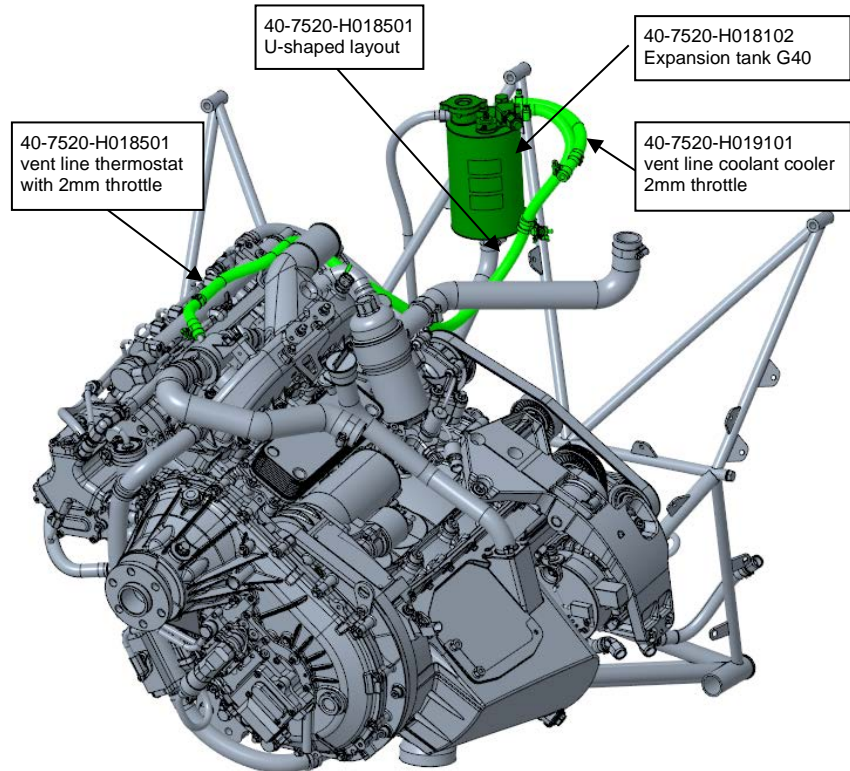


Figure 3: Overview TAE 125-02-114 installation

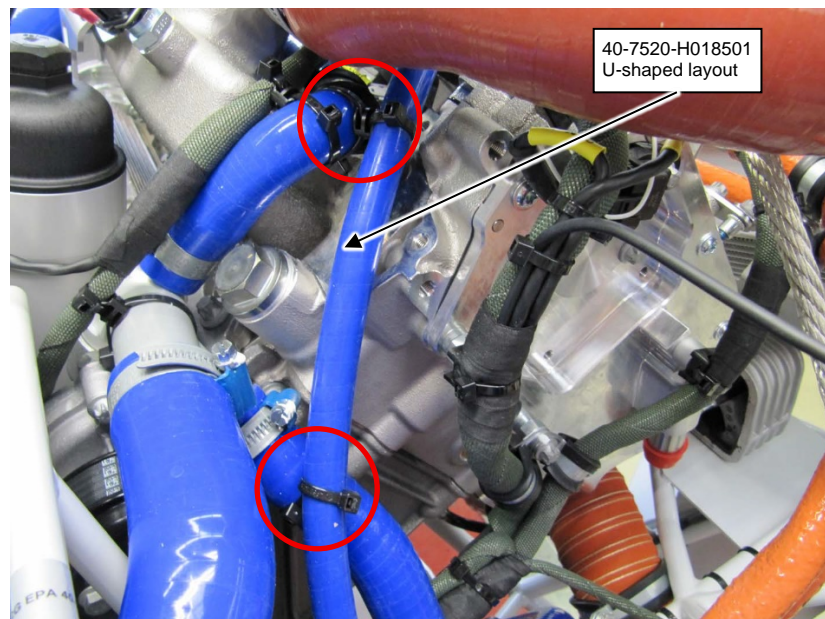


Figure 4: Attaching points fixing ties with coupler

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3.2. TAE 125-02-99 installation

Item	Part Number	Description 1	Description 2	Qty.
---	40-7520-S0010 01	conversion set	expansion tank G40	1
1	40-7520-H0185 01	hose	thermostat	1
2	40-7520-H0194 01	expansion tank	installation set	1
2.1	40-7520-H0025 02	label	coolant	1
2.2	40-7520-H0195 02	expansion tank		1
2.3	NM-0000-00038 01	plain washer	ISO 7089 – 6 – 200 HV – A2E	4
2.4	NM-0000-00110 01	locking screw	M6x10 – 8.8 – A2E	1
2.5	NM-0000-00181 01	hexagon nut	ISO 10511 – M6 – 04 – A2E	2
2.6	NM-0000-00197 01	hexagon head screw	ISO 4017 – M6x20 – 8.8 – A2E	2
2.7	NV-0000-01892 01	acrylic protective laquer		as req.
2.8	NV-0000-01905 01	LOCTITE 243		as req.
3	NK-0000-00414 01	hose clamp	ABA 11-17x9 – W1	3
4	NK-0000-00438 01	cap	Ø 8x38, black	1
5	NM-0000-00169 01	hose clamp	ABA 19-28x12 – W1	1

Table 2: Parts list for TAE 125-02-99

- a) Install the expansion tank (item 2.2) using the installation set (item 2). Refer to figure 2 for detailed information.
- b) Attach the vent line (item 1) to the thermostat using a clamp (item 3). The throttle, integrated in the vent line, must be located on thermostat side and the arrow labelled on the vent line must point towards the expansion tank. Refer to figure 5.
- c) Route the thermostat vent line towards the expansion tank while ensuring a U-shaped layout (*lowest point below the expansion tank bottom*). Refer to figure 5. Attach the thermostat vent line to the angled connection of the expansion tank using a clamp (item 3).
- d) Close the vent line connection of the main radiator using the cap (item 4) and a clamp (item 3).
- e) Finally, reconnect the lower coolant hose using a clamp (item 5) as well as the bleeder hose and the sensor wire.

Note: Secure the hoses adequately using cable ties.

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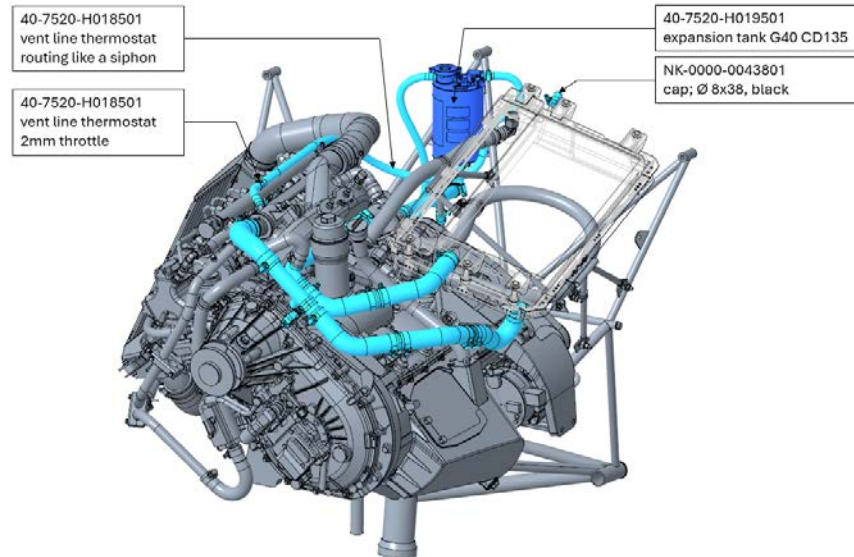


Figure 5: Overview TAE 125-02-99 installation

4. **System refilling and check**

- a) Perform the following steps acc. to AMMS chapter 12.10
 - Flush the cooling system
 - Refill the cooling system
 - Check proper function of coolant level warning
 - Perform an engine ground run to bleed the system
- b) Check the system for leakage.
- c) Perform a coolant system pressure test acc. to AMMS chapter 75.00.

Remarks: ---

Approval: The technical content of this document is approved under the authority of the DOA ref. EASA.21J.010.

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