

	SERVICE INSTRUCTION	No. SI-2026-1
	TURBOCHARGER WASTEGATE SERVO CABLE COOLING	Rev. 0
		Date: 17.09.2026

A. APPLICABILITY:

All aircraft equipped with engines Rotax 914UL.

B. MATERIAL AND TOOL INFORMATION:

Material:

ITEM	QUANTITY
Turbo cooling deflector DYN-171-07	1 pc
Epoxy resin L285	AR
Hardener 287	AR
Cotton flocks	AR
Glass fabric 92110	AR
ECONET 500 AL	AR
Pattex Chemoprén adhesive	AR
Aluminium tape 50 mm	AR
Peel ply	AR
Abrasive paper	AR
Cleaning solvent	AR
Masking tape	AR

Tools:

ITEM	QUANTITY
Measuring tape (2 m)	1 pc
Marker	1 pc
Composite cutting tools	AR
Grinder	AR
Sanding tools	AR
Clamps or magnets	AR

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C. PROCEDURE:

1) Preparation

- Remove upper engine cowling.
- Mark the position of the turbocharger wastegate servo cable onto the outer surface of lower engine cowling. This reference will be used to verify the final position of the turbo cooling deflector (Fig. 1, Fig. 2, Fig. 3).
- Remove the lower engine cowling from the aircraft.
- Clean the work area.
- Position and fix the lower engine cowling securely on a suitable workbench.

2) Marking and cutting the opening

- Locate the initial opening using these reference dimensions. Rear corner of initial opening is located:
 - 455 mm forward from the rear edge of lower engine cowling (Fig. 2, Fig. 3)
 - 190 mm from the longitudinal centreline of lower engine cowling (Fig. 5, Fig. 4).
- Align the turbo cooling deflector inlet parallel to the longitudinal axis of the lower engine cowling, with the inlet opening facing forward. Verify the position of the opening on the aircraft and adjust it as required to ensure the airflow will direct to the turbocharger wastegate servo cable (Fig. 1).

NOTE

Due to normal manufacturing tolerances of individual engine cowlings, these dimensions are installation references only. Before cutting, always verify the final position on the individual aircraft so the airflow is directed onto the turbocharger wastegate servo cable.

- Mark the outer contour of turbo cooling deflector (continuous line) and the contour for cutting that is smaller about 20 mm (dashed line) than the outer contour of turbo cooling deflector marked at lower engine cowling (Fig. 6, Fig. 7).
- Cut the opening along the inner contour (dashed line). Deburr and smooth all cut edges.

3) Bonding surface preparation

- Remove thermal insulation from the bonding area (Fig. 8).
- Sand and clean all bonding surfaces (Fig. 9).
- Remove the peel ply only from the bonding flange of turbo cooling deflector (Fig. 10).

4) Dry fit verification

- Position the turbo cooling deflector from the inside of the lower engine cowling without applying adhesive.
- Secure the turbo cooling deflector using permanent magnets or another suitable temporary fixing method (Fig. 11).
- Reinstall the lower engine cowling onto the aircraft.
- Verify that the turbo cooling deflector is correctly positioned and that the airflow will be directed onto the turbocharger control Bowden cable (Fig. 12).
- Remove the lower engine cowling from the aircraft.
- Remove the temporarily installed turbo cooling deflector.

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5) Bonding

- Apply a thin coat of epoxy resin to both bonding surfaces (Fig. 13, Fig. 14).
- Apply epoxy resin thickened with cotton flock to the bonding flange of turbo cooling deflector (Fig. 15).
- Install the turbo cooling deflector from the inside of lower engine cowl.
- Align and secure the turbo cooling deflector in correct position using magnets or another suitable fixing method (Fig. 16).
- Remove excess epoxy resin.
- Let the resin to harden for 24 hours at room temperature (approximately 20–25 °C).

6) Finishing

- Remove remaining peel ply.
- Grind the transition between the cowl and turbo cooling deflector to eliminate sharp edges (Fig. 17).
- Sand glossy surfaces.

7) External Reinforcement

- Apply a thin coat of epoxy resin to the bonding surfaces and fill the transition between the turbo cooling deflector and lower engine cowl with epoxy resin thickened with cotton flock to create a smooth transition (Fig. 18).
- Apply two plies of glass fabric 92110 around the perimeter. First ply is 50 mm wide strip and second ply is 40 mm wide stripe (fibres orientation $\pm 45^\circ$). Saturate the glass fabric with epoxy resin (Fig. 19).
- Cover the reinforcement glass fabric with a peel ply (Fig. 20).
- Let the resin to harden 24 hours at room temperature (approximately 20–25 °C).
- Perform the final cure at temperature 55 °C for 15 hours.
- After completion of the final cure, allow the lower engine cowl to cool down to room temperature before further handling.

8) Final Finishing

- Remove peel ply, sand as required.
- Reinstall the removed thermal insulation using an adhesive (e. g. Pattex Chemopren) (Fig. 21).
- Cover the joint between the old and new thermal insulation with aluminium tape (Fig. 22).
- Prepare the outer surfaces for primer and paint.
- Paint the affected areas with a paint (Fig. 23).

9) Inspection and check

- Install the lower engine cowl
- Verify correct position of turbo cooling deflection.
- Airflow path.
- Verify bonding quality.
- Verify thermal insulation.
- Verify clearances.
- Install the upper engine cowl.
- Perform the engine ground test according to POH.

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Fig. 1 Turbocharger wastegate servo cable



Fig. 2 Turbocharger wastegate servo cable and initial intake opening positions

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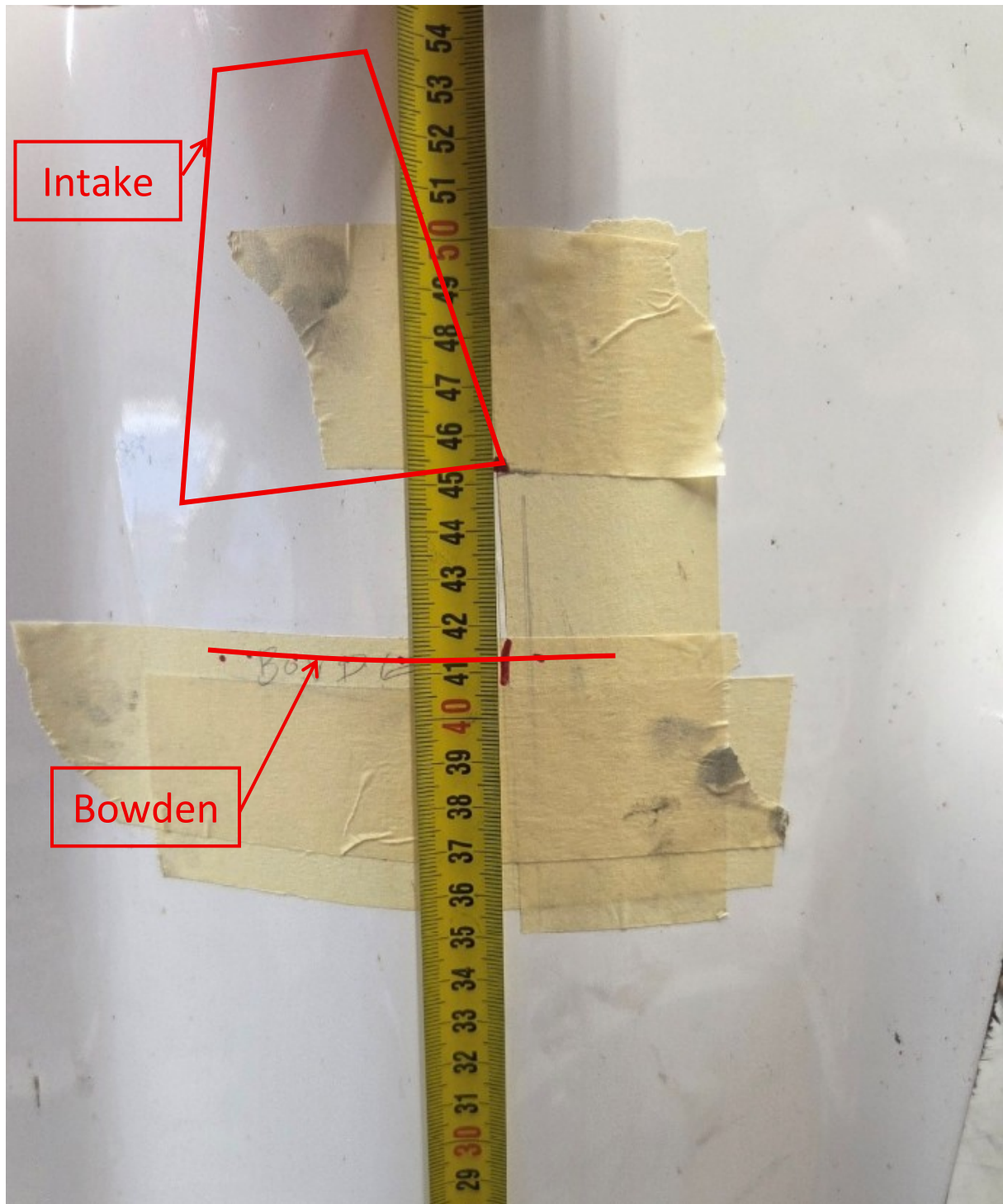


Fig. 3 Turbocharger wastegate servo cable and initial intake opening positions

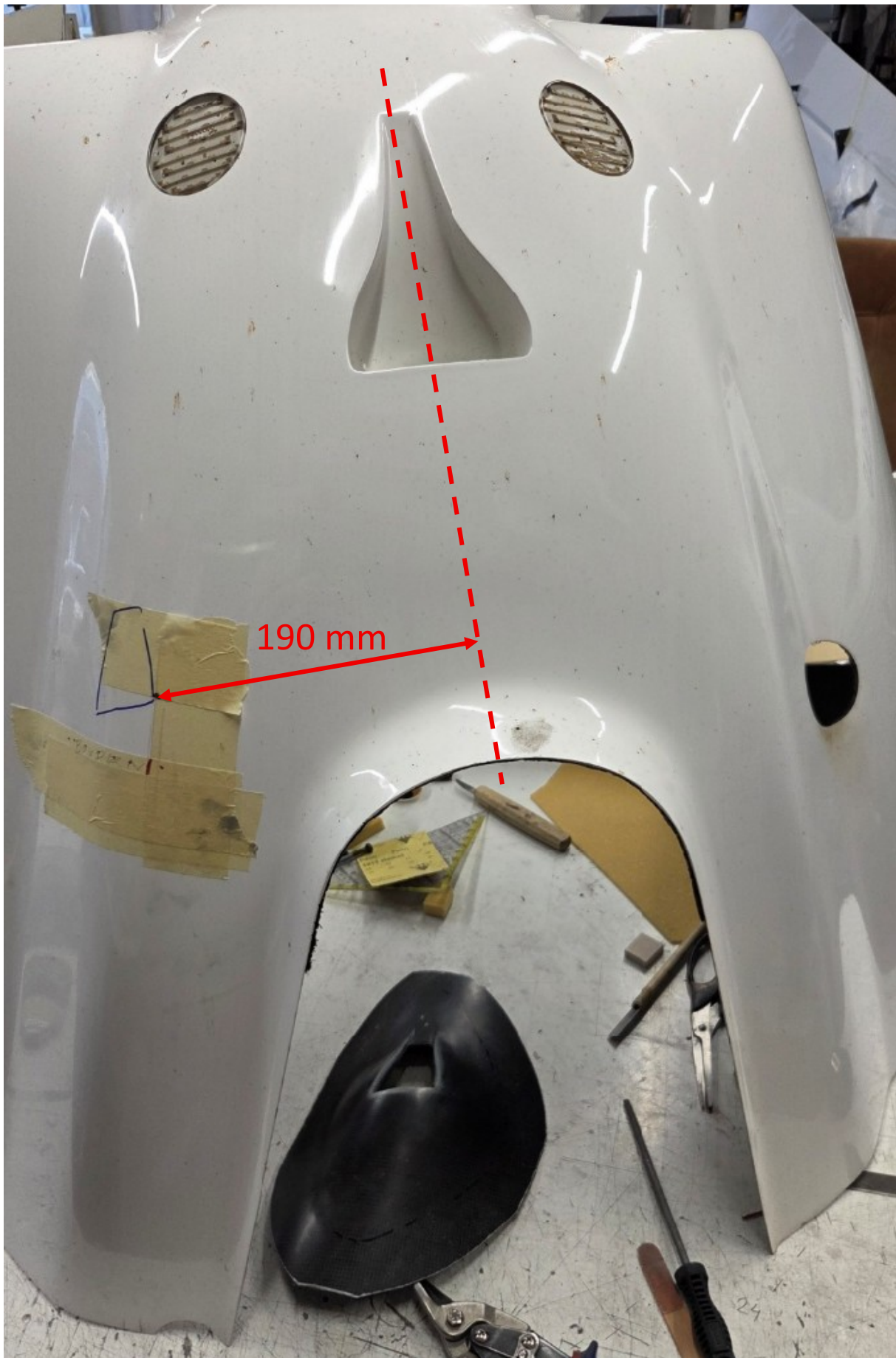


Fig. 4 Turbocharger wastegate servo cable and initial intake opening positions

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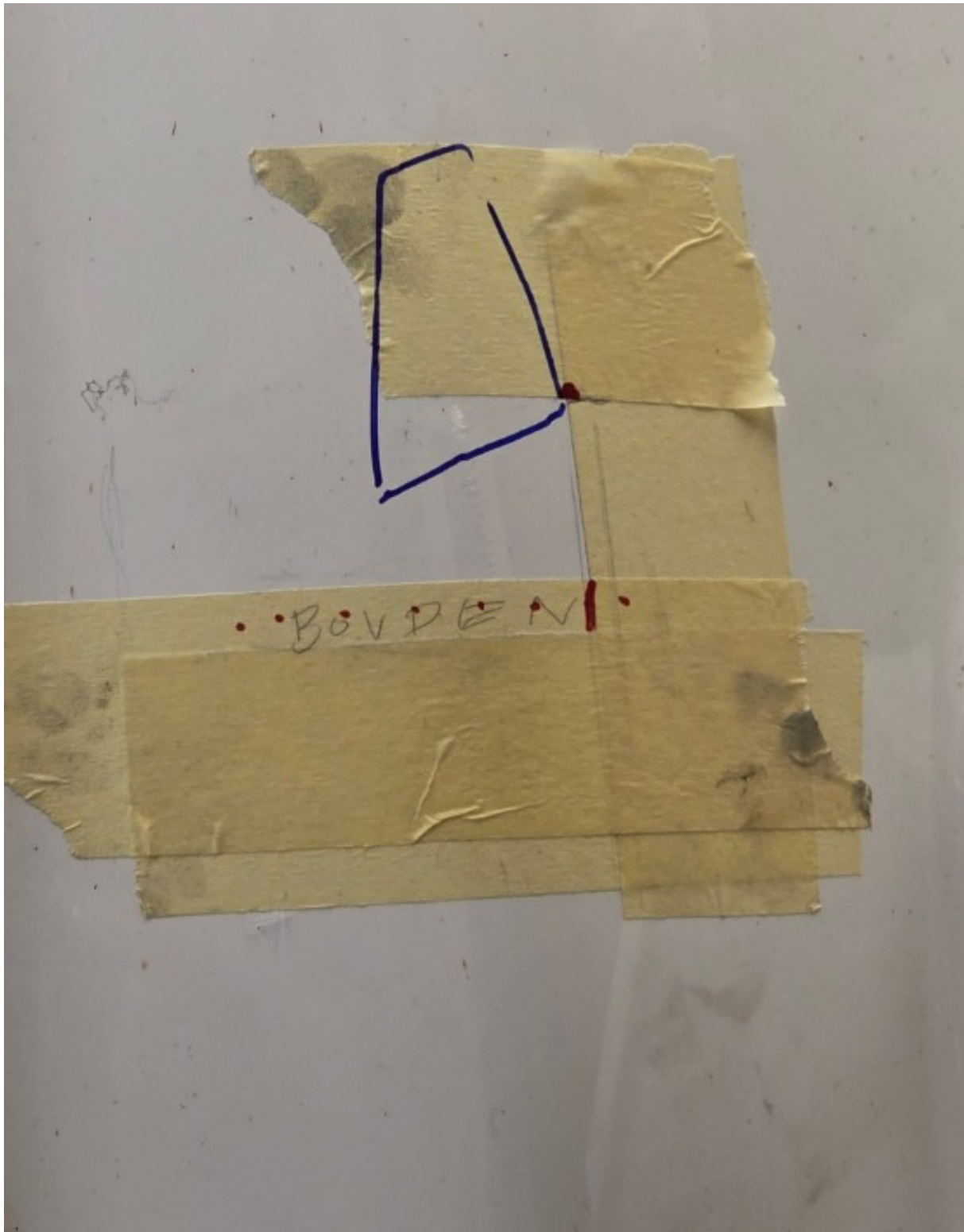


Fig. 5 Turbocharger wastegate servo cable and initial intake opening positions

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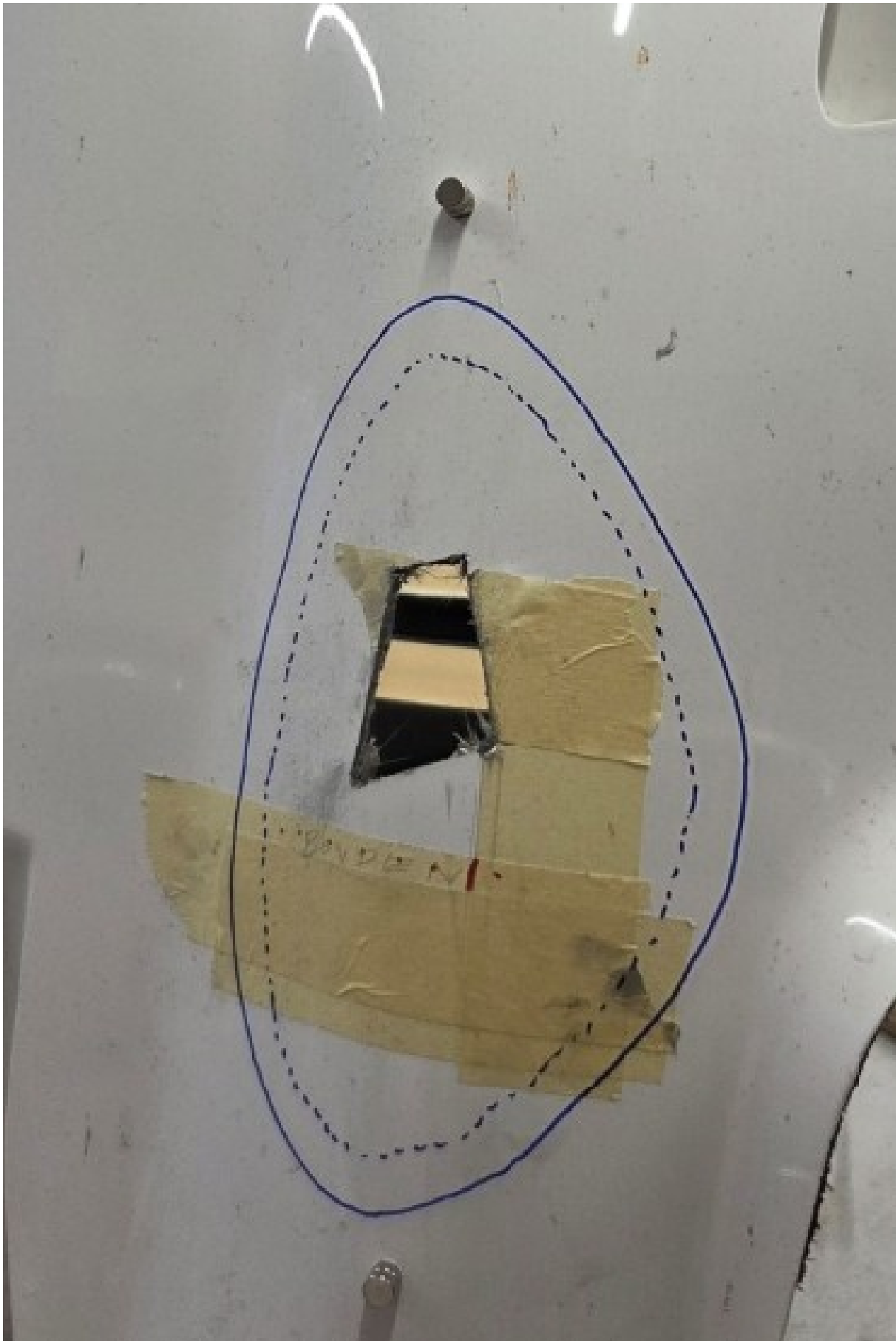


Fig. 6 Marking contour and opening for turbo cooling deflector

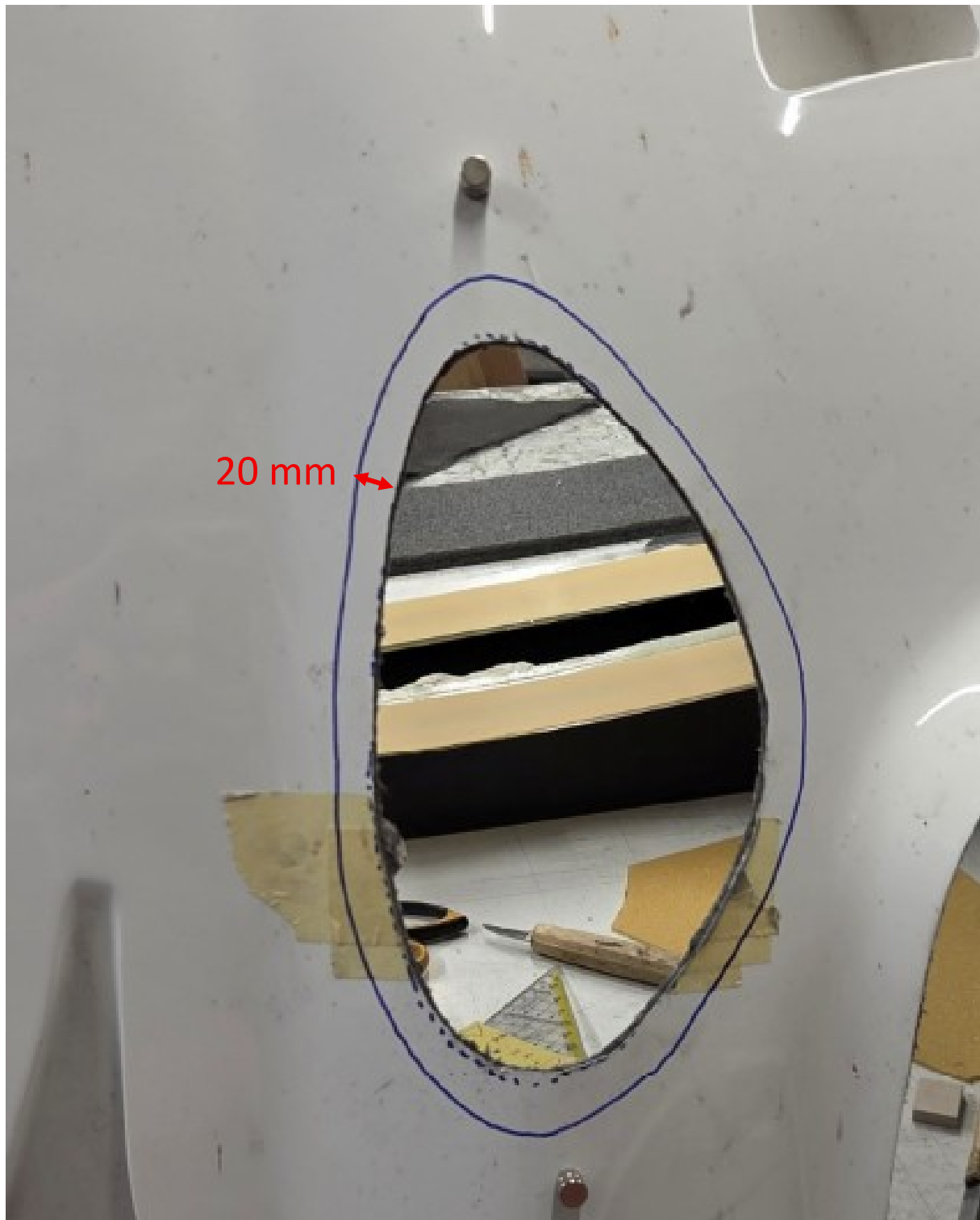


Fig. 7 Cut-out for turbo cooling deflector

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Fig. 8 Heat insulation removing

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Fig. 9 Bonding surfaces sanding



Fig. 10 Peel ply removing

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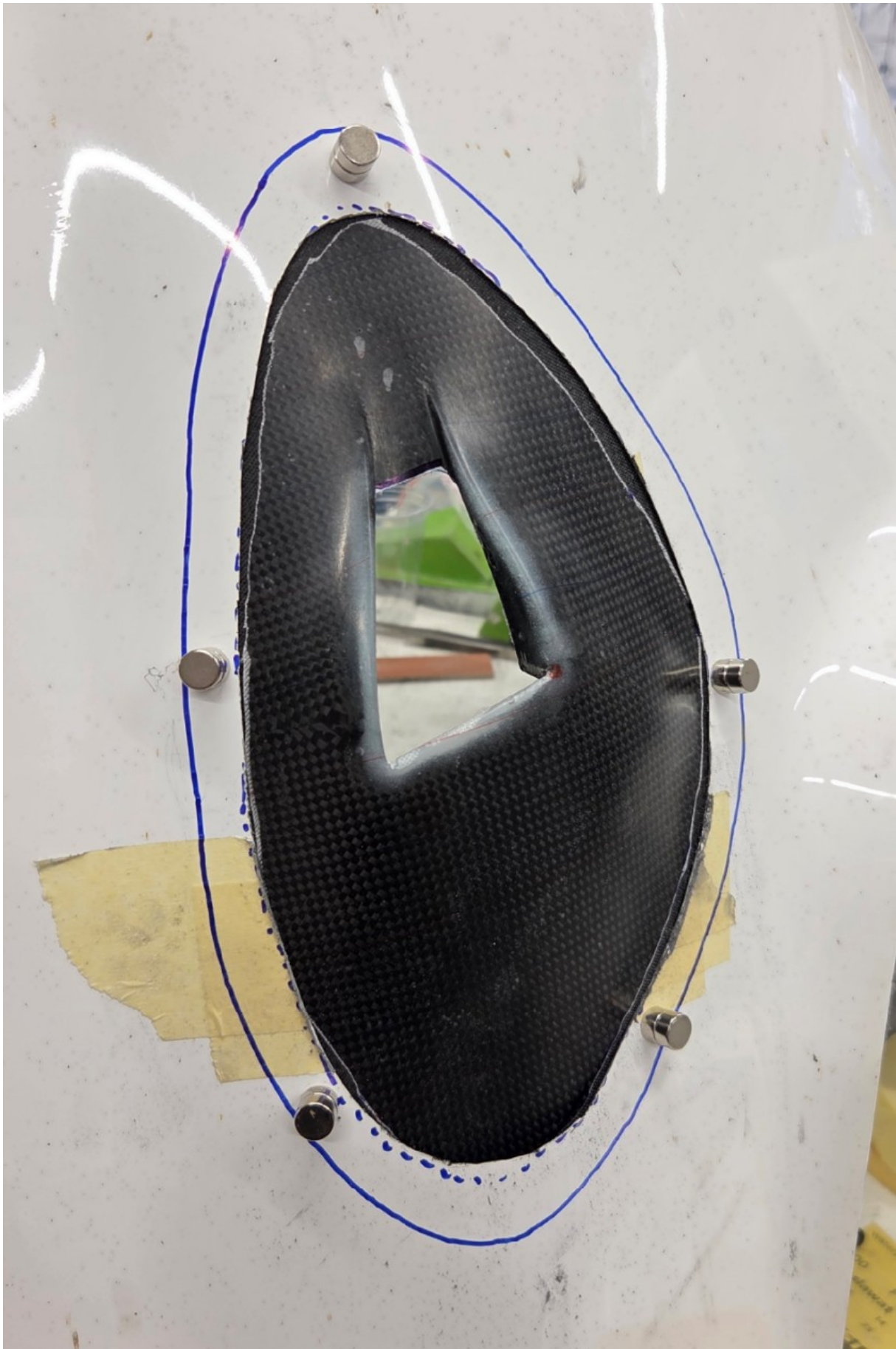


Fig. 11 Fixation of turbo cooling deflector (example)

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Fig. 12 Dry fit verification

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Fig. 13 Wetting the of turbo cooling deflector's bonding surface

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Fig. 14 Wetting of lower engine cowl bonding surface

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Fig. 15 Applying thickened epoxy resin to the turbo cooling deflector bonding flange



Fig. 16 Positioning and securing the turbo cooling deflector



Fig. 17 Grinding smooth transition between the cowling and turbo cooling deflector



Fig. 18 Filling the transition between the cowling and turbo cooling deflector

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Fig. 19 Reinforcement layers

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Fig. 20 Peel ply application

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Fig. 21 Bonding of thermal insulation



Fig. 22 Covering of thermal insulations joint

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Fig. 23 Cowling painting