



R/TR182 Induction System Review & Component Condition Assessment Discussion with Chase Duncan, 6/25/2025

Chase Duncan
Scott Sellers

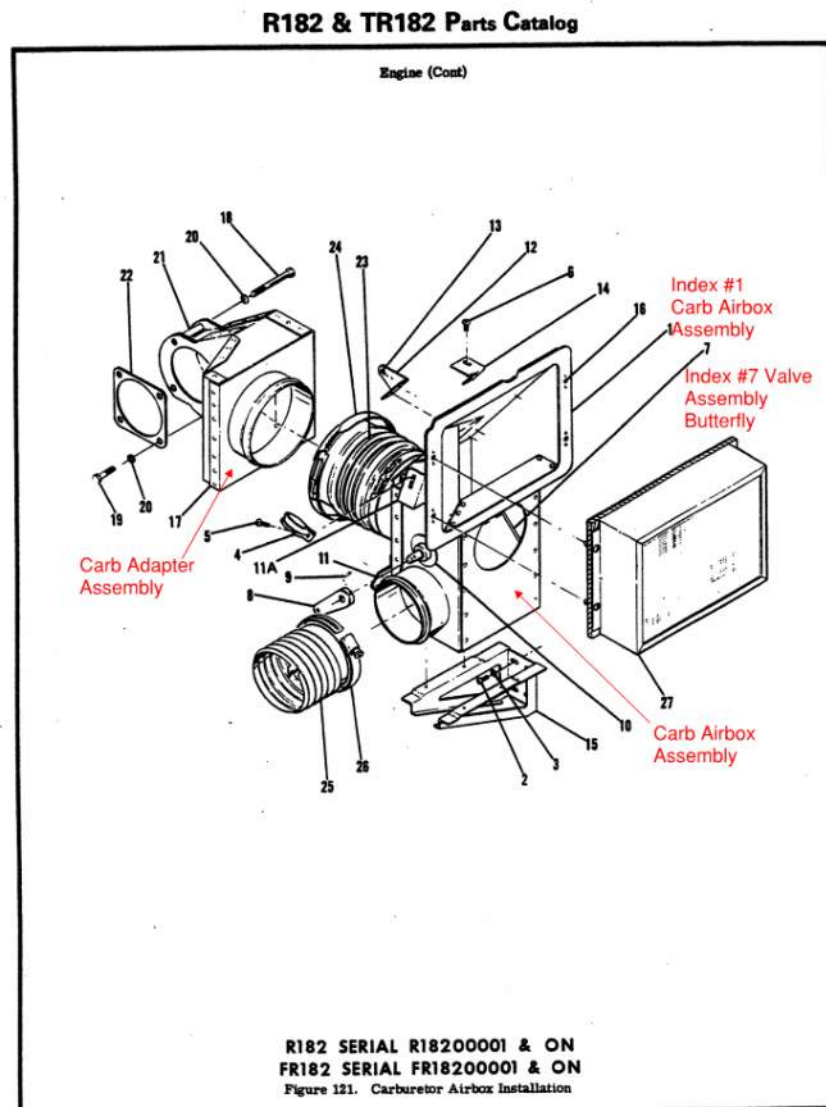
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Discussion Topics

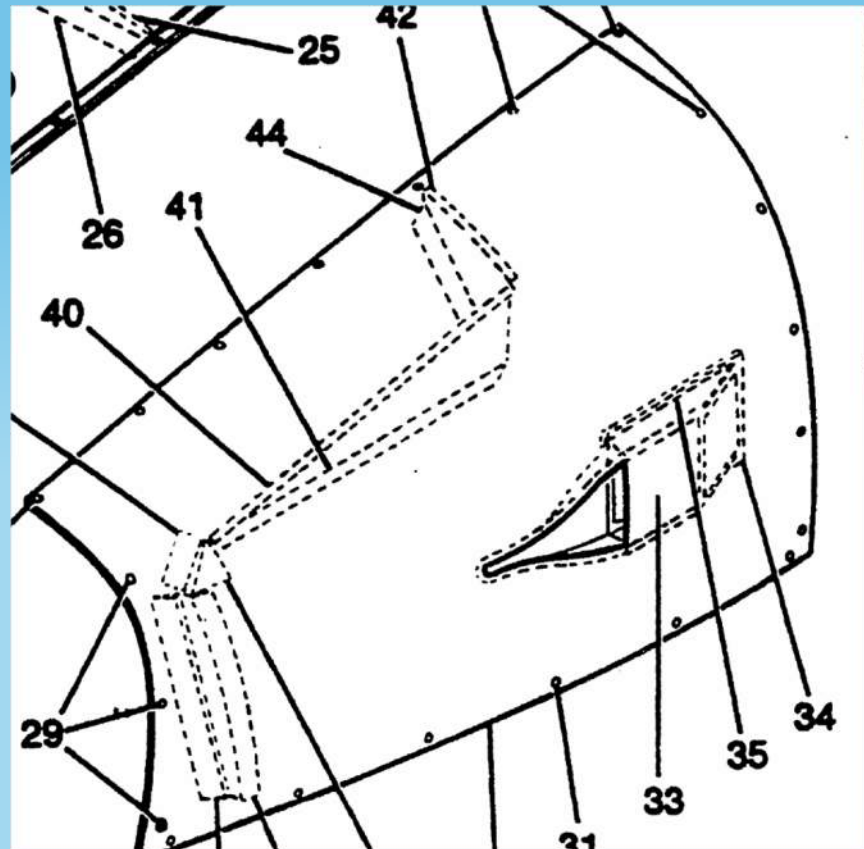
- What are the main components of the air intake?
- Why are carb airboxes safety of flight items?
- How to tell if your carb airbox is in airworthy condition?
- Example airboxes in various conditions

What are the main components of the air intake?

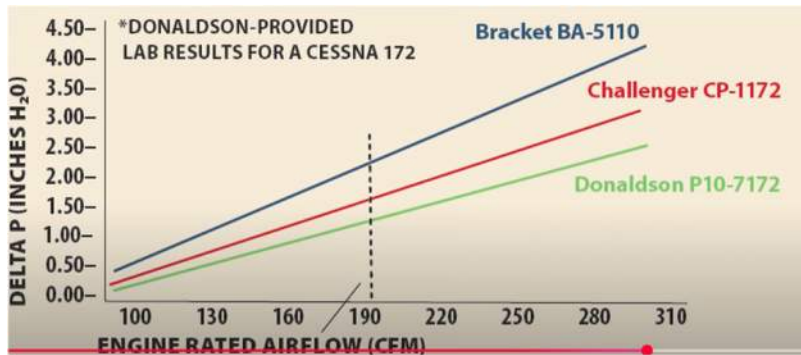


Air Intake

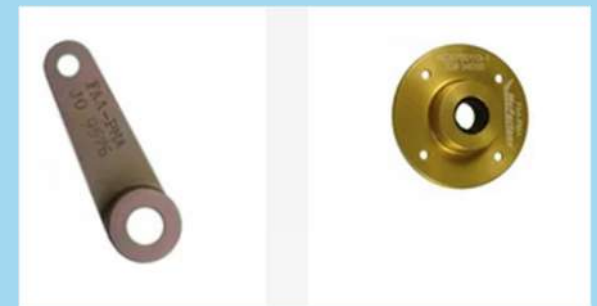
Seals 34 and 35 are often missing.



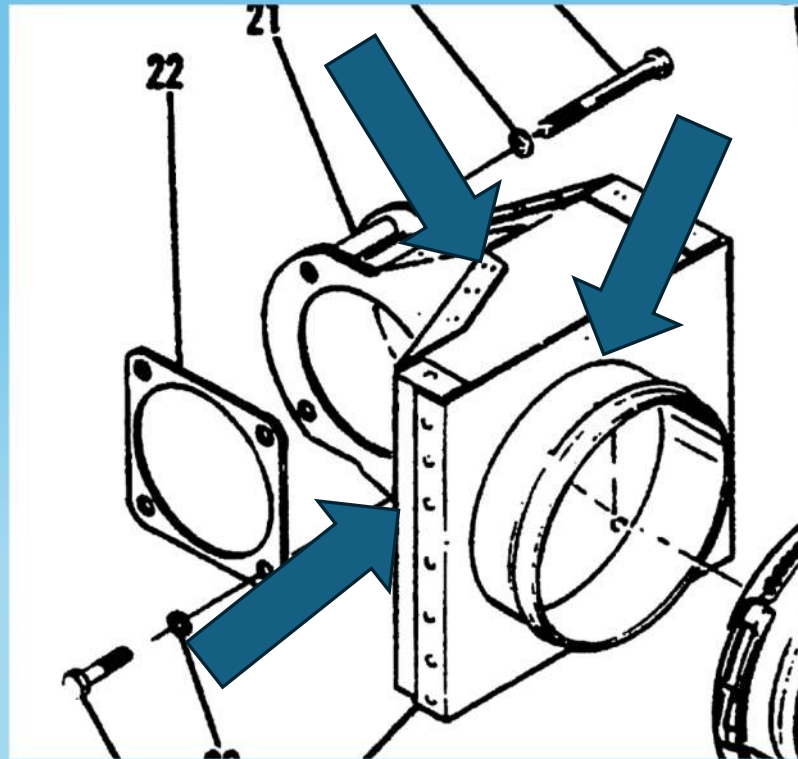
Air Filters



What is a Carburetor AirBox?



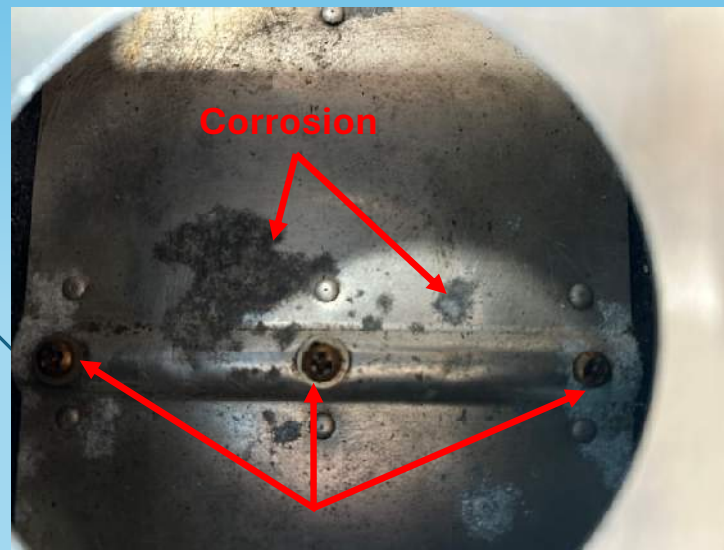
Carb Adapter



Common Carb Airbox Repairs or What to look for in a replacement Airbox

- Butterfly pivot bushings not worn – no up/down or fore/aft play
- Butterfly pivot arm in good condition – no worn holes or corrosion
- Butterfly membrane is flexible and seals well at the Airbox wall interface – membrane not rigid
- Aluminum butterfly plates not corroded – trapped water between plates & membrane can cause corrosion of plates(see photos)
- Airbox rivets are sound and not leaking air

Airbox Butterfly Pivot items to Check



Correct butterfly attachment hardware

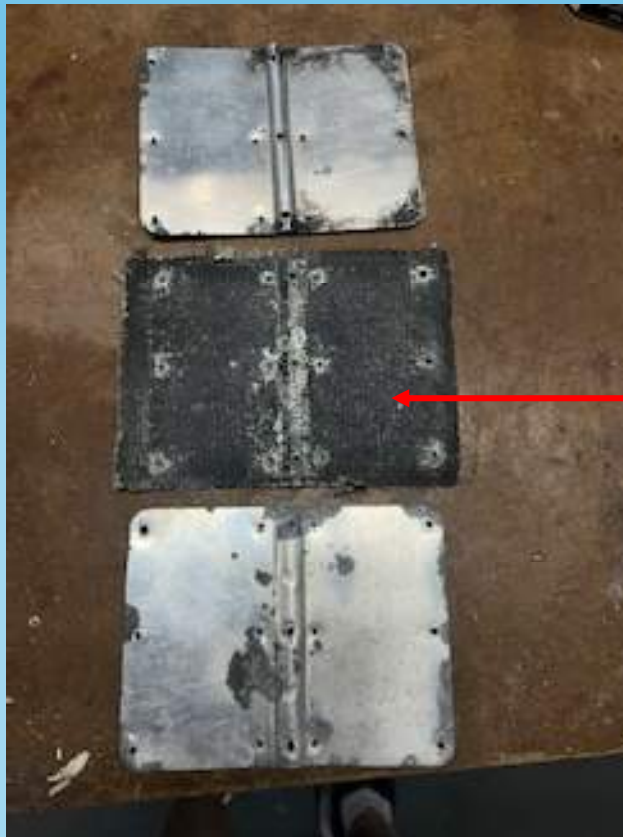
Butterfly pivot arm attachment in good condition



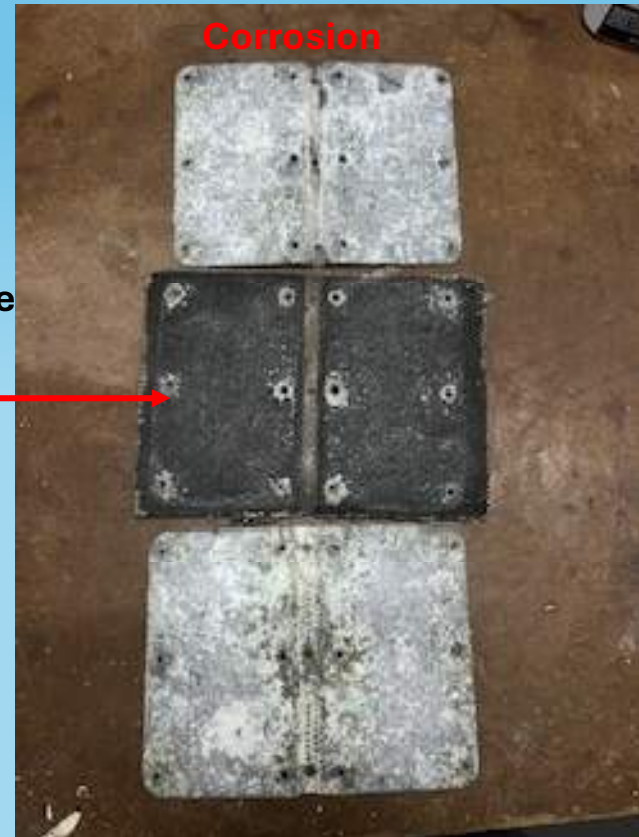
Airbox Butterfly items to Check



Airbox Butterfly items to Check



Age hardened
neoprene membrane



Why are carb airboxes safety of flight items?

- Partial or full power loss can occur if airbox fails by obstructing or reducing airflow to the carburetor
- Cessna airbox failures are not totally infrequent
- Search 'Cessna airbox failures' and you find accidents
- If the butterfly fails its parts can be ingested and damage the engine

How to tell if your airbox is in airworthy condition?

- Move the carb heat control to see if the butterfly is sealing the airbox when at the open or closed position
- Watch the butterfly over as someone moves the carb heat control
- Visually inspect the butterfly to see it is in sound condition
- Try moving the pivot arm up/down & fore/aft in the bushings, checking for play

How to tell if your airbox is in airworthy condition?

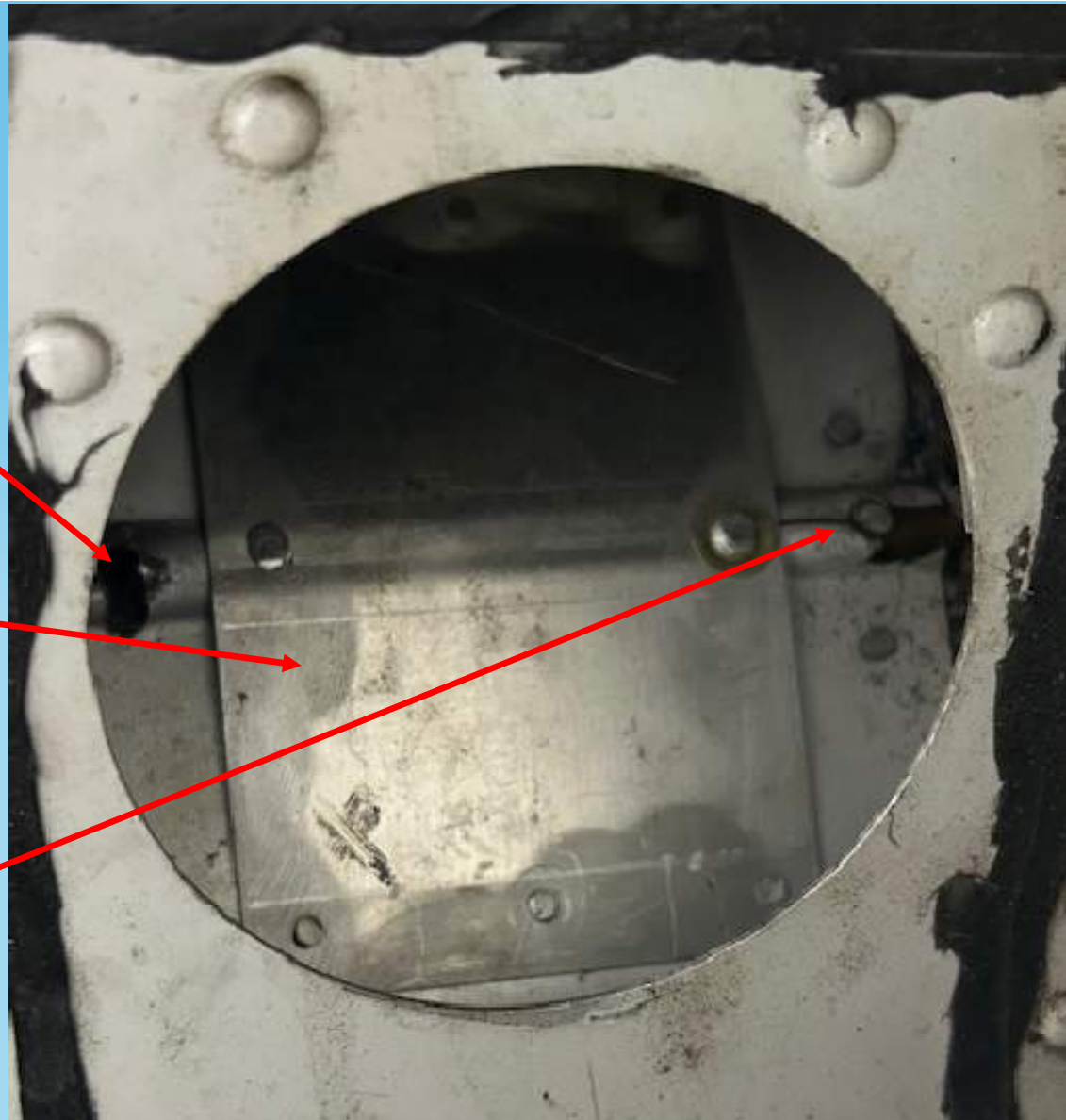


Note any butterfly repairs

Note missing rivet

Repaired butterfly plate is
secure but not correct,
should have 3 fasteners
not 2

Plate cracked at pivot,
rivet cracked



Inside Your Airbox



**Membrane marks on
airbox walls**



**Membrane marks on
airbox walls**

Examples of worn boxes



If you find damage , What Now

- Acorn can overhaul
- BAS has 4 in stock



**2250016-1 Cessna 182RG Air
Box Assembly Carburetor
(From O-540 Series Engine)**



**2250016-1 Cessna R182
Carburetor Airbox Assembly
with Air Filter**



**2250016-1 Cessna 182RG Air
Box Assembly Carburetor
Assembly with Bracket**



**2250016-1 Cessna 182RG Air
Box Assembly Carburetor
Assembly Less Bracket**

Questions

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