

CAMERON AND SONS AIRCRAFT  
208-765-9295

[www.cameronaircraft.com](http://www.cameronaircraft.com)

### NACA INLET INSTALLATION INSTRUCTIONS

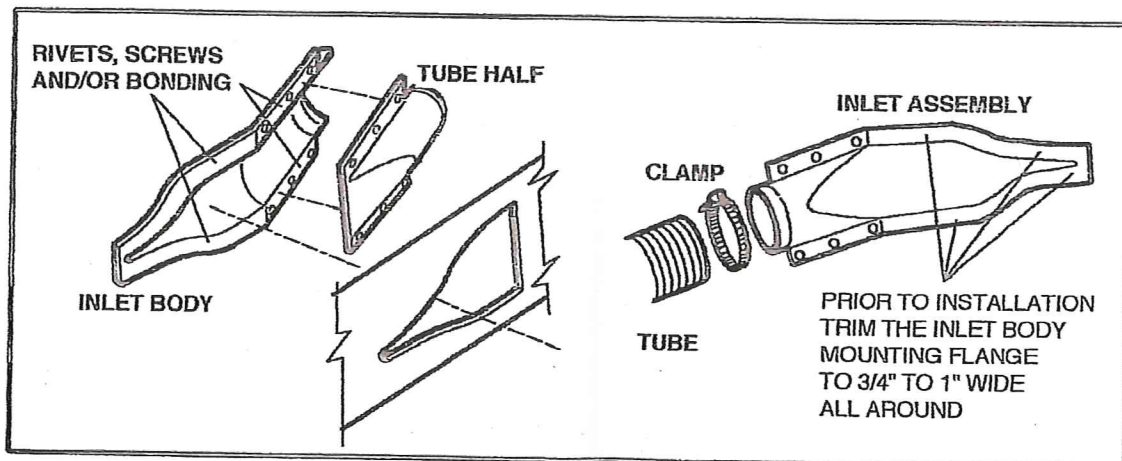
The following procedure is the recommended method of installing the NACA inlet components provided in this kit.

#### Tools Required

Tin Snips  
Drill motor  
Drill bit sized to fastener diameter  
Appropriate adhesive (not provided in this kit)  
Safety glasses  
Protective gloves  
Masking tape

#### Installation procedure:

1. Using the NACA inlet shape as a template, cut the scoop inlet hole in the mounting surface.
2. Trim the NACA inlet body to resemble the shape as shown below. Leave a  $\frac{3}{4}$ " to 1" mounting flange around the scoop opening. If the inlet is to be exterior surface mounted, file or otherwise sand edges and corners to a finished shape.
3. As shown below, assemble the tube half to the inlet body using fasteners or adhesive. Be sure the outside diameter of the tube halves are aligned.
4. Position the inlet body assembly to the inlet hole. Tape the inlet body assembly in place.
5. If using rivets or screws, drill mounting holes as required.
6. If installing with adhesive, remove the inlet assembly. Sand or grit blast the area of intended bonding. Rivets or screws can be used with bonding if desired.
7. When the bonding has cured, install hose and hose clamp as required.



## Bonding and fastening

Polycarbonate sheet can be joined or bonded to itself and other substrates with the use of adhesives and mechanical fasteners. Selecting the correct adhesive and avoiding stress (such as sharp notches), brittle components and regions of potential stress crazing, will maximize the benefits of the Polycarbonate and the success of the application.

**Note:** In general, structural-type bonding requires a combination adhesive bond and mechanical fastener backup.

## Adhesive Bonding

Suitable adhesives are elastomeric, tough, impact absorbing, vibrational and thermal stresses without fracturing. Adhesives inherently brittle or with chemically incompatible properties should be avoided.

Silicone should not be considered a structural adhesive. It should only be used in conjunction with mechanical fasteners or when bonding large surface areas.

## Mechanical Fasteners

Non-rusting, aluminum pop rivets with back-up washers, plastic and metal bolts, and type 23 or 25 pan head screws are recommended fasteners for Polycarbonate. For all types of fasteners the sheet should be pre-drilled with 1/16" oversized holes to allow for expansion. An approved RTV silicone sealant is used in the hole with the fastener to prevent possible stress or fatigue cracking at the hole around the fastener.

**Note:** The mechanical fasteners should be spaced so the expected load is carried without localized overstressing.

Adhesive	Bonds	Comments	Color	One or Two Part System	Application Method	Set-up time	Cure Time	Supplier
Urethane	Virtually anything (specific grades bond to butyrate)	A clear, flexible high-impact bond. Excellent peel & shear strength	Clear	Two	Flow	30 mins. to 8 hrs. @ 75° F.	5 hr. @ 150°F or 7 days @ 75°F	<ul style="list-style-type: none"> <li>• Hartel</li> <li>• Enterprises Inc.</li> <li>• Ciba-Geigy</li> <li>• Hartrenn Corp.</li> <li>• IPS Weld-On</li> </ul>
RTV Silicone	Metal Plastic Wood Aluminum Steel	Excellent heat resistance. Good thermal expansion.	<ul style="list-style-type: none"> <li>• Clear</li> <li>• Red</li> <li>• Black</li> <li>• White</li> </ul>	One	Flow Brush	60 mins.	24 hrs. @ 75°F	General Electric
Signbond	Polycarbonate	A clear, fast-setting bond. Moderate impact resistance.	Clear	One	Flow	20 secs.	24 hrs. @ 75°F	General Electric
Methylene Chloride	Polycarbonate	A clear solvent that produces high tensile strength bonds. Low impact resistance.	Clear	One	Flow	20 secs.	48 hrs. @ 75°F	Any chemical company

Urethane is an outstanding adhesive for Polycarbonate to Polycarbonate use with its flexible impact-resisting bonds and characteristic optical clarity, high peel and lap shear strength. Required with Urethane is critical accuracy in the mixing of the two components.

**Note:** Ciba-Geigy @ (800) 759-7165;  
Product #5774, 5776 or 6100 Cameron Aircraft (208) 765-9295

## Finishing Sanding

Polycarbonate can be sanded using both wet and dry techniques. While dry sanding can cause gumming, wet sanding produces a smooth surface. Utilizing either method should not be considered an end finishing.