



Fasteners

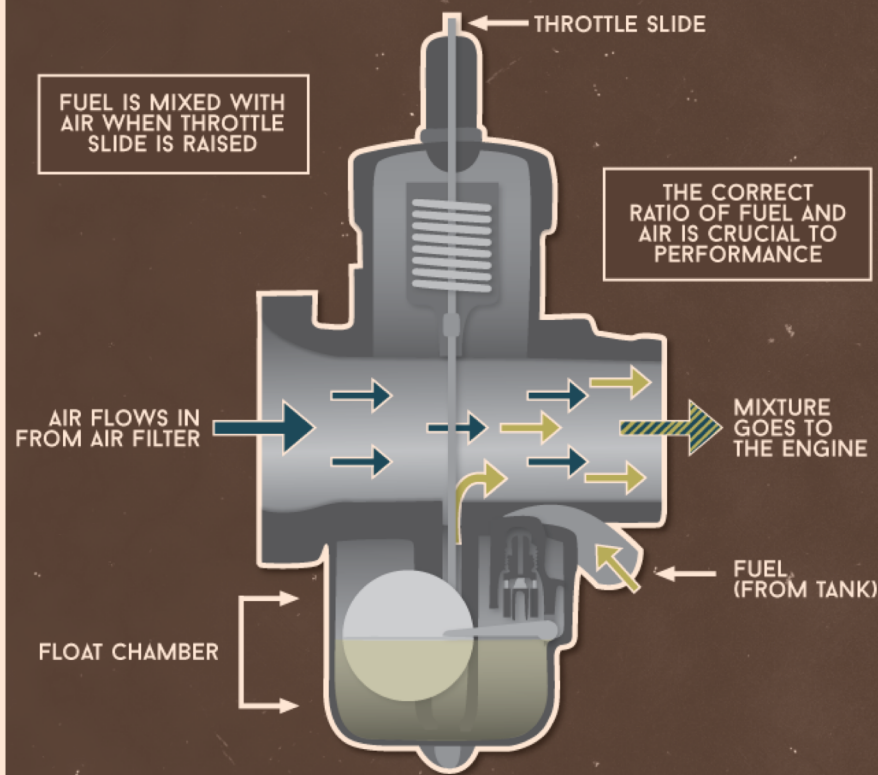
Laura and Elizabeth

Carburetor

Used the skeletons of 6 old carburetors (all the same type-- Amal Monobloc 376 Series), took inventory of all parts, reassembled, and tested on old bike

“Open the throttle”

BASIC CARBURETOR COMPONENTS



This is a diagram of the basic components and function of a carburetor. Essentially, the carburetor is responsible for creating the correct fuel/ air mixture to be used in the engine. The gasoline enters from the tank, through a petcock and fuel line, into the float chamber, which regulates the amount of fuel allowed to enter the carburetor. A series of jets mixes the fuel with the air which flows in from the air filter, and the mixture then goes into the engine. Air flow over the jets draws up fuel and causes mixing. The throttle cable determines the positioning of the throttle slide; when the throttle slide is lifted, more fuel goes into the engine, and when it is on “full choke”, no fuel goes into the engine.



The base of the carburetor was extremely dirty, so we used wire brushes to remove the grit.

We finished!



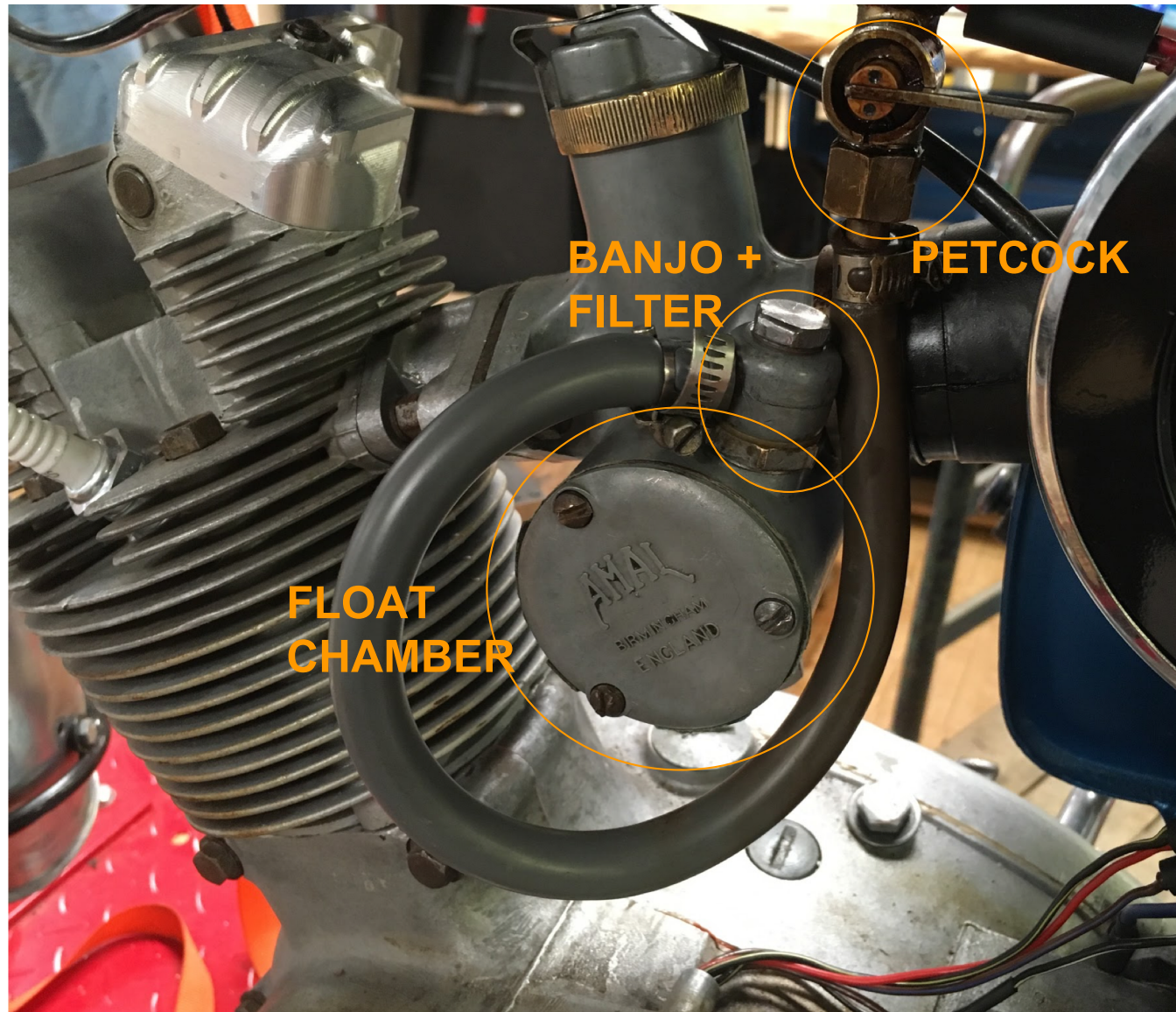


This is how the throttle cable attaches to the carburetor.

This video shows the throttle slide going up and down. This movement is occurring due to the throttle being turned at the handlebars. One can see that as the throttle slide is lifted, the space inside the carburetor grows. This corresponds to more air flow because of the bigger space and thus more fuel is drawn up from the jets and sent into the engine. This is where the phrase “open the throttle” comes from, as one literally opens the space more to allow more fuel in, and thus more speed.



We attached the carburetor to the engine, at left, and the air filter, at right, but we noticed it was leaking, potentially from one of the three areas shown.



Problem solving:
where is it
leaking and how
do we fix it?

When we tested our carburetor on the blue bike, it leaked gasoline immediately. We determined several areas the leaking could be stemming from: the banjo, the fuel line itself, the petcock, and/or the float chamber. First we added a second gasket to seal the float chamber. Then we noticed that there was a poor seal between the banjo and the filter base (the filter was old), so we put on a new filter and banjo, which worked like a charm. We also fit a new petcock on, as the old one was leaking as well.

Gaskets

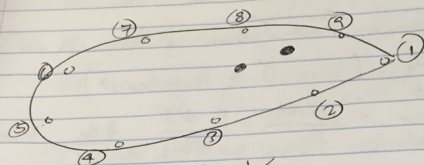
We had to hand make new gaskets for the engine covers of both the timing and clutch sides. To start, we used a milling machine to measure the position of each of the holes.





This was a very long process as the mill kept freezing and so in order to get the correct coordinates we had to try three or four times for each gasket.

Take 3 - Finally!



inches

	X	Y
①	0.000	0.0000
②	-2.2760	-1.7290
③	-5.1395	-2.4285
④	-7.8685	-2.3655
⑤	-10.3875	-0.7460
⑥	-10.2005	2.1920
⑦	-7.5405	3.3845
⑧	-4.6190	3.0695
⑨	-1.7440	1.8855

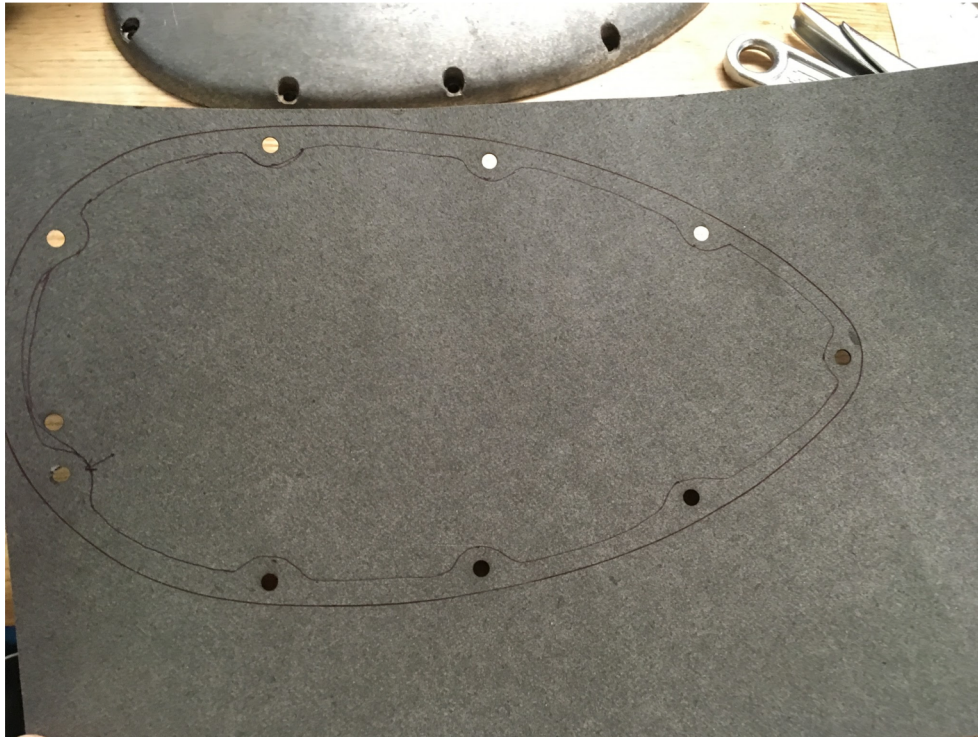
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drill
bits

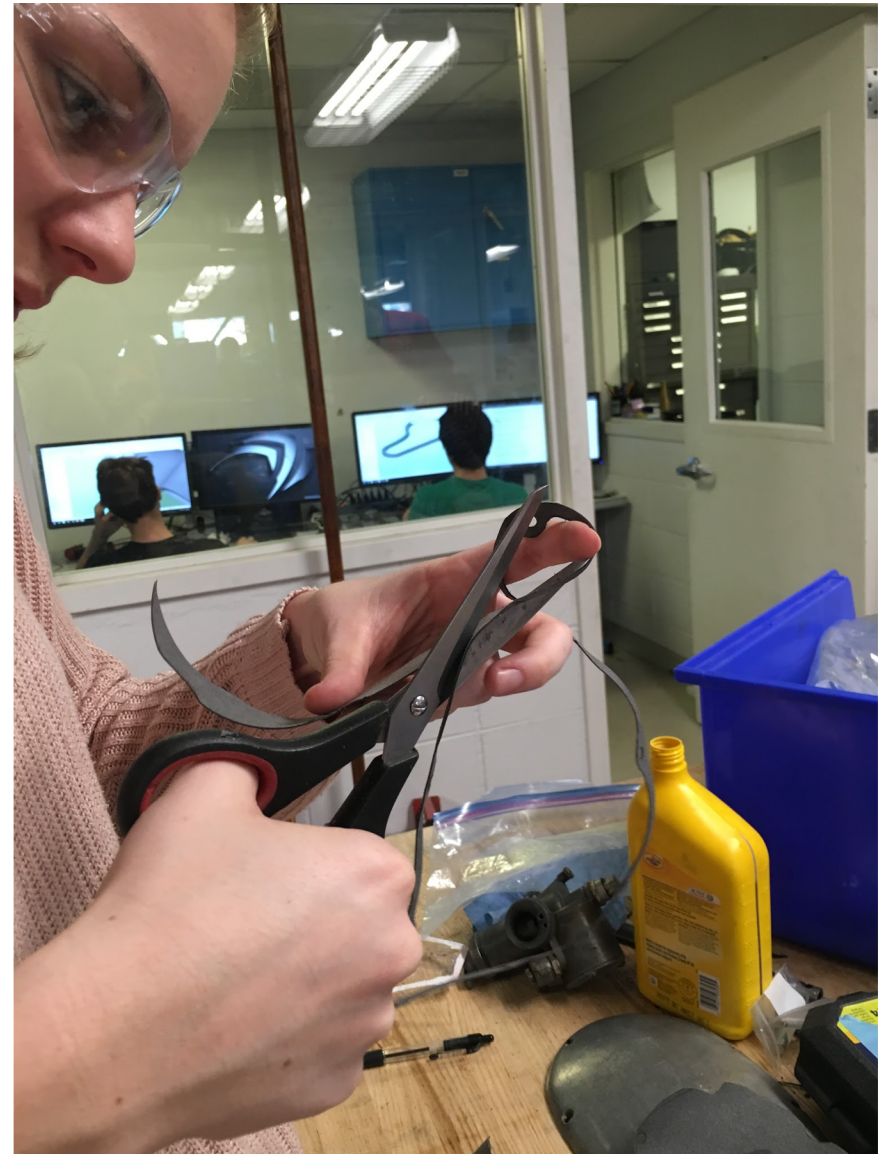
We then plotted the coordinates of each of the holes and used Creo software to make a drawing which we could laser cut.

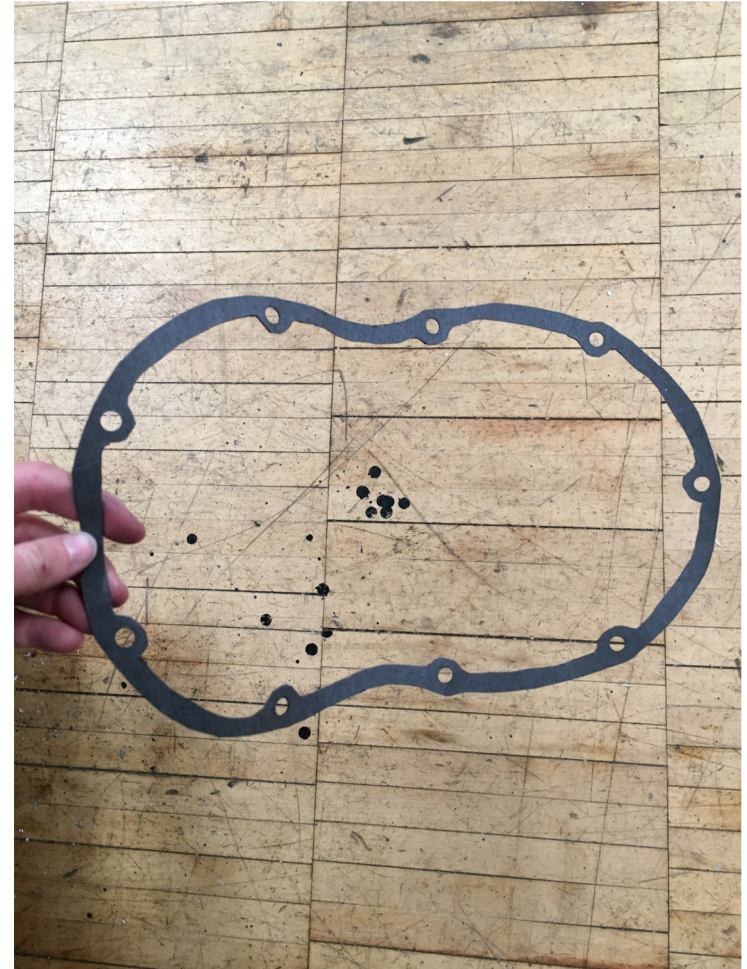


We then laser-cut the gasket material with the correct holes.



After laser cutting the holes, we traced the engine cover and cut out the gaskets.





And voila – tailor-made artisan gaskets!!

Speedometer



We made a new fitting to keep the speedometer in place, shown above.