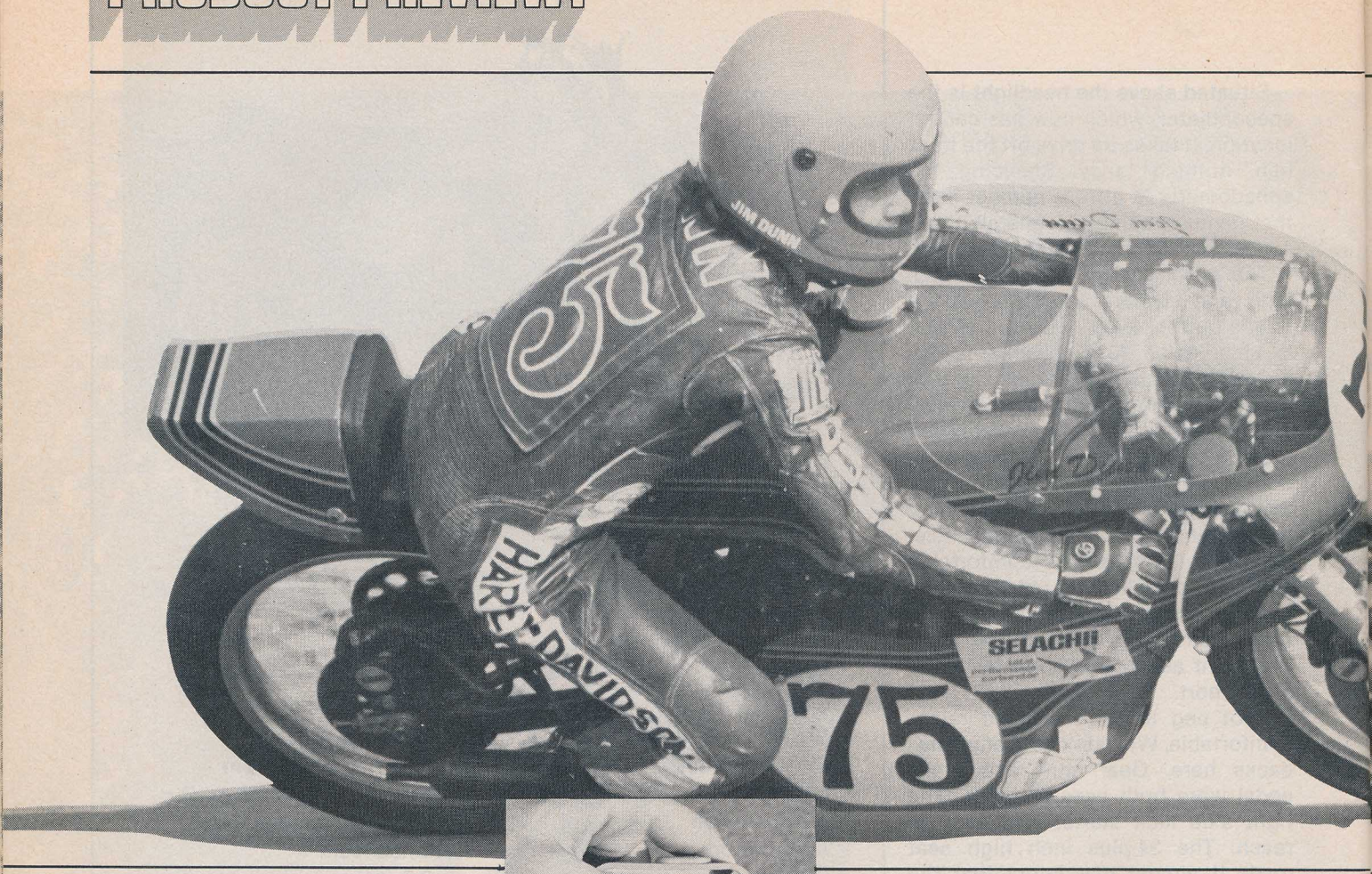
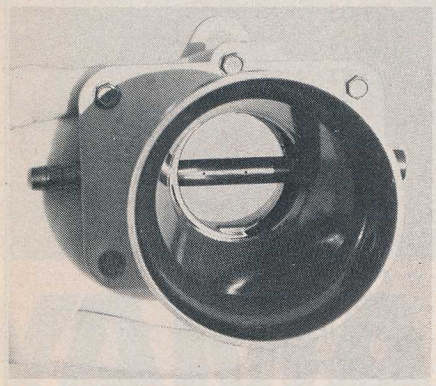
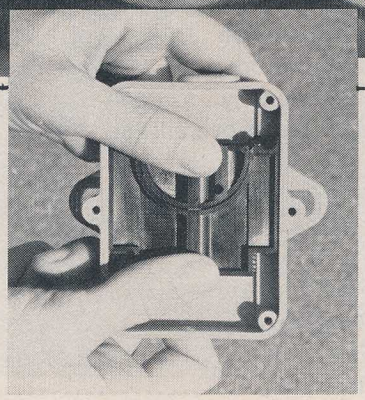
PRODUCT PREVIEW:

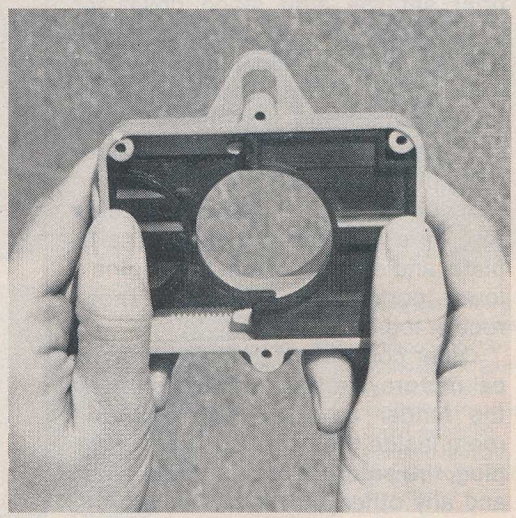


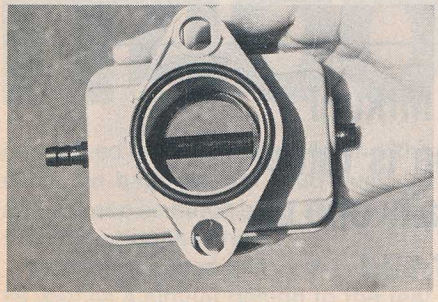


ABOVE — From the velocity stack atomizing tube shows two rather large holes for incoming air.

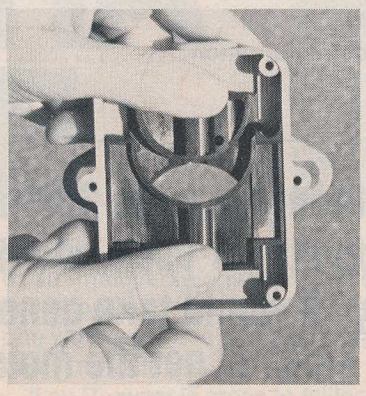


ABOVE — An inside look at the slide when it is closed. Note tiny crack for idle.

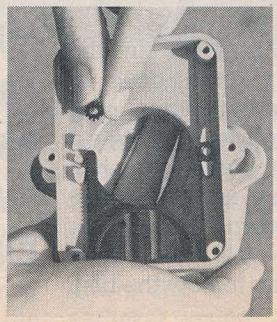




ABOVE — The other side of atomizing tube reveals two rows of holes for atomized air to exit.



ABOVE — The slides are now at half throttle. The venturi hole is always centered to port.



ABOVE — At full throttle the venturi of the carb is perfectly round. The atomizing tube would be centered in venturi.

LEFT — The slides are governed by rack and pinion gears. There are two of each, one on either side of slide.

Selachii Carburetors

Lightweight, Plastic, and Very Unorthodox

by Dain Gingerelli

One of the toughest hurdles for a tuner to overcome is carburetion. If he gets that licked, he can pretty much make his engine do what he wants it to. Because of that, engineers and designers have been devising and developing all kinds of strange fuel mixers for internal combustion engine use. Some have been worthwhile, others were just another R & D exercise.

We came upon this new carburetor — the Selachii — while at a local club road race. Jim Dunn had two of them equipped on his Yamaha TZ250, and was doing some R & D for the Selachii people.

The Selachii carb was designed by D.H. Blakeway. Work on it began in 1974, in the hopes of developing a carburetor that was efficient, yet easy to tune. The name Selachii incidentally, is taken from the shark, which is credited as the fastest shark in the ocean.

The most outstanding feature of the Selachii is its light weight. Depending on the size of the carb, most weigh at or about five ounces. Currently there are three sizes available; 36, 38, and 40mm.

The lightness of the carburetor is attributed to the use of General Electric's Valox 420 Thermoplastic Polyester. Valox 420 is a resin that is impervious to gasoline and other automotive fuels, and is pretty near indestructible.

Light weight is not the only feature of the Selachii. The carb is also very simple, in theory and design, and does not use a float bowl to begin fuel atomization. Instead, the fuel is fed directly to the fuel atomizing chamber, or tube. There is only one jet for this, a needle much like that found on the Mikuni slide/needle carb. Rich/lean mixture is determined by the amount of taper the needle has, again like the Mikuni. The needle has a taper on only one side of its slender, cylinderical body. The other half is rounded, and plays no significance in jetting. Selachii includes several needles with every carb for proper jetting.

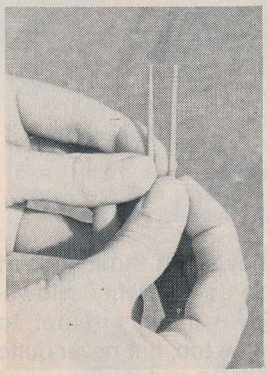
The fuel then enters the atomizing chamber, where it is then pre-atomized with the air that is allowed in through several large holes on the intake side of the carb body.

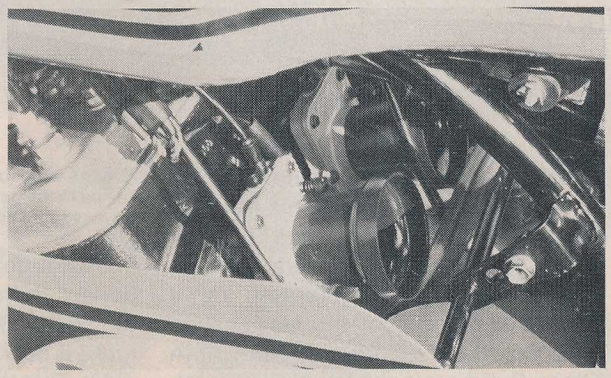
On the other side of this chamber, facing the intake port of the engine, are two rows of tiny holes that emit the pre-atomized fuel and air into the engine's port. The amount of air is determined by the location of the *slides.* That's right, slides.

The carb body has two slides for determining venturi opening. Quite naturally, one slide goes up, while the other goes down, when the throttle is turned. Both slides act in unison due to two small pinion gears that ride on rack gears of the bottom slide. As the top slide is pulled up by the throttle cable, the pinion gear is turned, which in turn moves the bottom slide down. This way, the venturi opens in an eliptical manner so the venturi is always round, and dead center to the bore of the intake port.

The simplicity of the design helps explain the lightweight of the unit. All told, there are only twenty-two parts to the carb. We can't say how well they work, as these were the first units we have seen. Dunn was still doing some testing to those on his bike, so we didn't have a chance to see them during optimum conditions. According to the Selachii people, the carb has been tested on the flow bench up to 600 cubic feet per minute, not bad if the figure is true.

The carb body comes with both flange and spigot mount. An O-ring is used on the flange mount for proper sealing. Also, a velocity stack is equipped on each Selachii carburetor. More information can be attained by writing Selachii Carburetor Limited, 2398 Haines Road, Department HB, Mississauga. Ontario, Canada L4Y 1Y6. They will be able to help you determine which size will best suit your particular motorcycle engine.





ABOVE — At left are two needles. The one on left is for rich mixture, as it is thin, permitting plenty of fuel to pass through. Needle on right has thick body for leaner mixture. At above right are the Selachii carburetors on Jim Dunn's Yamaha TZ250 road racer.