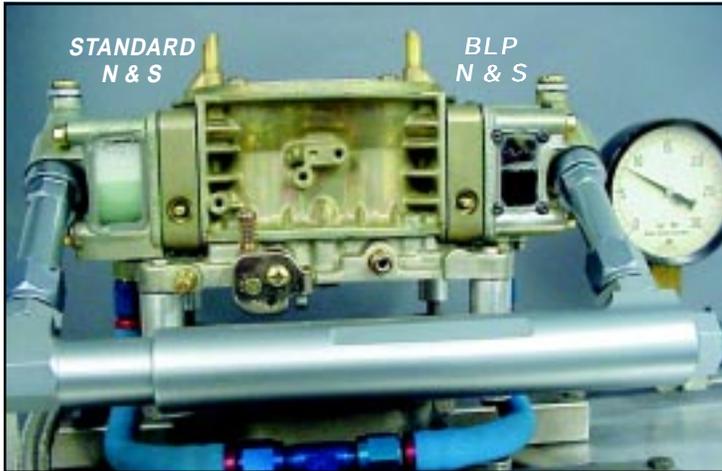


BLP FLOATS AND BOTTOM FEED NEEDLE & SEATS FOR THE HOLLEY® CARBURETORS



The float bowl is a reservoir supplying all of the fuel to the carburetor. The float bowl sounds like a simple part but it performs several functions. The float bowl acts as a fuel reservoir and a venting system to prevent vapors that are trapped in the fuel as it is being pumped from the fuel cell building up pressures in the float bowl. The size or capacity of the bowl is very important! It must be large enough to supply fuel to the metering system until the pump purges vapor and delivers liquid fuel.

The float operates the needle and seat so fuel enters the bowl at the correct time. The float needs to be designed with the right amount of buoyancy to shut the

needle once the desired level has been reached. The float needs to be the right weight and buoyancy to react to fuel pressure with a minimum amount of float vibration. The float also must have the right shape to perform properly under certain racing conditions.

The two main float bowl problems are aeration in the float bowls and excessive float vibrations.

From our experience and complaints from our customers we feel there are some problems with the existing floats used in Holley® Performance carburetors. The biggest problem is that the float bracket extends into the float body. These floats have a tendency to become heavy because fuel can seep into the float around this bracket. This is especially prevalent when using methanol for fuel. Also, these brackets may become loose when subjected to the vibration encountered in a racing environment. Furthermore we believe that some floats are too buoyant and actually increase the vibration problem. These floats have to be weighted to respond better to changing levels.

With the help of Custom Plastics Development, Inc., located in Kissimmee Florida, we initiated a project to design and produce our own floats. We considered what problems currently exist with floats and also asked for some input from engine builders and Nextel Cup teams. This was a combined effort and the following is a general outline of the BLP Floats and why we chose the designs.

The number one design criteria we required was a mounting bracket that was independent of the internal part of the float body, so under no circumstances could the float body take on fuel. Other considerations were:



MATERIAL

Custom Plastics Development, Inc. has years of expertise on this subject so we asked for their guidance in our design. They recommended an engineered plastic material that is impervious to racing fuels including Methanol, Leaded and Unleaded Racing Gas. In addition to those qualities, the material is very strong and is favorable to sonic welding of the cover and housing to form a leak proof assembly. They contacted their supplier engineers to get this assurance.

BRACKET

The float bracket is constructed from 316 stainless steel materials and the thickness is .024". The design criterion is for the bracket to be strong and will be molded into the rib support structure of the float body. Because we are now making a bottom exit needle and seat we designed the bracket to flow more fuel past the float lever down into the bottom of the bowl.



SHAPE

When making inquiries one of the complaints we encountered with the current floats was that there is very little clearance between the top of the float and the vent whistle. It is not uncommon for the vent whistle to interfere with the top of the float. This causes a symptom that resembles a leaking needle and seat when it is actually the vent whistle holding the float open. We determined that a notch was needed in the top of the float to clear the vent whistle which we incorporated into our design. Another concern stressed by the Nextel Cup teams was that more clearance was needed between the side of the float and the main jet. This was also incorporated in the new design.

BUOYANCY AND WEIGHT

The float should be designed with enough buoyancy to positively shut the inlet valve when the desired level is reached. We felt that some of the current floats are too buoyant and have to be weighted down to work properly. We took all of this into consideration with our design. Depending on the shape the BLP float weighs from 12.6 to 12.9 grams. The float responds well to level change without overreacting or excessive bouncing. We also offer and recommend a stiffer float bumper spring.

DESIGN

The float is a two-piece unit consisting of a bottom housing that can vary with the shape needed, and a top housing that is common to all 4 shapes. The two pieces are sonic welded together and 100% tested for leaks. The bracket is molded into the side of the float and does not extend into the float body.

AVAILABILITY

The floats are available in 4 shapes.

43701BLP is a primary Circle Track float

43711BLP is a secondary Circle Track float

43721BLP is a Road Race Float

43731BLP is a secondary Drag Float



FLOATS ARE CURRENTLY IN PRODUCTION AND WILL BE AVAILABLE BY FEBRUARY 2005

FUEL BOWL FUEL AERATIONS



Currently the fuel from the fuel pumps exit into the fuel bowls through two windows machined in the needle and seat. The fuel exits through these windows above the fuel level and this causes a severe aeration problem. We have designed a bottom feed needle and seat that exits the fuel below the float level and this eliminates the aeration problem.

These needles and seats are designed to work with the BLP floats but will work with the standard Holley® or Braswell floats. These needles and seats have been tested with very positive results.

THE NEEDLE AND SEATS ARE IN PRODUCTION AND SHOULD BE AVAILABLE IN MARCH 2005

BLP - BO LAWS PERFORMANCE PRODUCTS, INC.

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