Lee's Speed Shop

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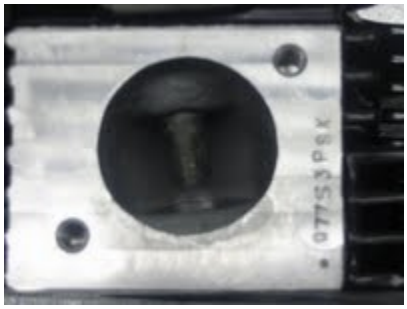
World's Best Flowing Indian Heads



Kind of reminds you of the movie title "World's Fastest Indian" doesn't it? Sorry, nothing quite that cool here. Cool ....but not that cool. I recently finished work on a set of heads for an Indian PowerPlus 100 (that's the late model overhead valve engine, not the Flatheads of yesteryear). These were not the first of these heads I have done porting work on, but they were the ones I put the most time and effort into.

On the previous heads, I was strictly doing an "basic" porting job. I re-used the stock valves and simply worked with what was there. While I was still able to get a sizable increase in flow, for the valve size the results were disappointing (at least to to me). Thanks to Jeff Moll, one of the techs over at Fury Motors, on this set I was able to go a little further. Jeff not only sold the job to the customer, but he also provided me with a spare head for me to do preliminary experimentation on.

The PP100 (PowerPlus 100) heads were supposedly designed by a **BIG** name automotive firm who shall remain nameless to protect the guilty. Well, maybe not guilty; for all I know they may have been directed to design a lousy flowing intake port. If so, they succeeded with flying colors.

If you are familiar with the ports on Harley heads, then just picture the worst Shovelhead intake port you have ever seen and an average Evolution exhaust port blended into one head with a Twin Cam combustion chamber. Oh well, I guess it could have been worse. They might have used a Twin Cam intake port with a Shovelhead combustion chamber. Of course then they would have the Screamin' Eagle 103 open chamber head. Hmm.

Be that as it may, suffice to say, the PP100 has a decent exhaust port, a decent combustion chamber, and a really bad intake port. Now a bad intake port is one that flows poorly. A really bad intake port is one that not only flows poorly, but is missing material where it is needed to get good flow. Where Evolution and Twin Cam intake ports have a generous "hump" in the floor, the PP100 intake ports actually have a slight "dip" in the floor. Add to that the fact that each side wall of the intake port has a large "divot" across from the valve guide, and you have a head that is just plain begging "weld me ...WELD ME!"

A stock Indian PP100 intake port flows about 199 cfm at .500" valve lift, and about 206 at .600. Simply doing a standard porting job on this head using the stock valves will bump the flow to about 220 cfm at .500" and 234 at .600 (all of these flow figures are given at 25" test pressure). As a reference, stock Twin Cam heads flow about the same as the stock PP100 heads with a .100" smaller valve. Now if you increase the size of the Twin Cam valve to 1.900" (still .040" smaller than the stock PP100) and do a decent porting job, your flow will be

about 243 cfm at .500 and 253 at .600". So, you can see why I felt the flow on a ported PP100 was disappointing, because despite gaining nearly 30 cfm, for the valve size it was dismal compared to a Twin Cam. In fact it is a little dismal compared to the 232 cfm at .500" lift that I can normally get from a Shovelhead (which incidentally uses the same valve diameter as the PP100).

As is most often the case with production heads, the PP100 heads suffer from the diameter immediately under the valve head being too large for the valve size. The easiest method to rectify this is to install a larger valve, which was the first step in working up the "spare" head. A 2.0" intake valve is enough bigger than the stock 1.940" to allow me to "get some shape" to the seat area. From there I went through and ported the head as best I could with no material added, which gave me 256 cfm at .500 and 259 at .600" lift. Now things are looking promising! Next some clay to add a "hump" to the floor, and fill in the side "divots" and we are in business. A test with the clay installed showed that it would be worth while to have the customer's heads welded up.

Since the weld came right to the intake seat, I cut the heads for a new oversize seat insert, just to insure that the welding in such close proximity to the seat would not cause it to fall out at a later date. After shaping the newly welded in material to match the clayed up head, the heads were ready for the flowbench again. 256 cfm at .500" lift and 272 at .600 were the final results. More than 50 cfm gain over stock at .500 lift and 65 cfm at .600. Not too shabby. 35 cfm better than a Screamin' Eagle Performance Head. Like I said, not too shabby. Are they the world's best flowing Indian heads? They just may be. Is there potential for more? How much do you want to spend?

So I will continue to offer a Super Street porting job on PP100 heads where I use the stock valves ($499). But now I will add a Bare Bones porting job with 2" intake valves and no welding ($625) and of course the Pro Street porting with 2" valves and welding ($1200) A little performance to fit most anyone's budget.

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