

narrow the 45° face if it finishes too wide.

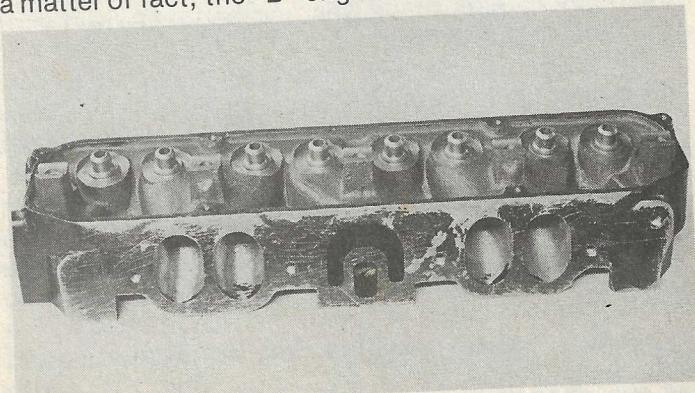
Another important factor in seat preparation is concentricity. The total runout permissible is .002-inch. This is a maximum figure — the smaller the better — and it applies to both the valve face and the seat in the head. To attain this level of precision, the best valve seat and facing equipment must be used. Further, once this concentric precision is attained, it is only effective when the valve-guide-to-valve-stem fit is of equal precision. This "fit" must remain precise if optimum valve sealing and longevity is expected. The proper preparation of valve guides is therefore an integral part of the valve/seat integrity.

The "B" engine uses cast-in valve guides. That is, the valve guides are part of the head casting and are not "replaceable." They can, however, be bored out on a special cylinder head mill and new cast iron or bronze guides can be press-fit in their place. It is now common practice to repair the existing guide rather than replace it, as there is less of a chance of altering the precise angle of the valve in the head.

Even badly worn guides can be reconditioned by installing bronzewall threaded inserts. This involves threading the guide with a special tap, then screwing in the bronze material and finally honing or reaming the inside diameter of the insert to the correct size. The bronze material is an excellent bearing surface for the valve stem and will often outlast the original guide by a substantial margin. Further, the bronze material allows operation with less clearance than would otherwise be required with cast iron. This results in additional precision in valve face and seat alignment, and, since the tighter clearance allows less valve "wobble," the resulting reduction in valve dynamic side loading promotes long guide life.

Increasing Port Flow

The "B" series engines all have very broad and strong torque curves. That is, the engines produce a very high level of torque over a wide engine speed range. This makes them ideal for the street and for "non-class" racing. We don't mean to say that the engine cannot be competitive in organized racing. As a matter of fact, the "B" engine is a strong competitor,



This is a unique W-2 "B" engine head casting that never made it past the flow bench. Externally this looks like a production casting but extensive changes have been made to the port and chamber molds. The oval intake ports were shaped like the smallblock W-2 heads.

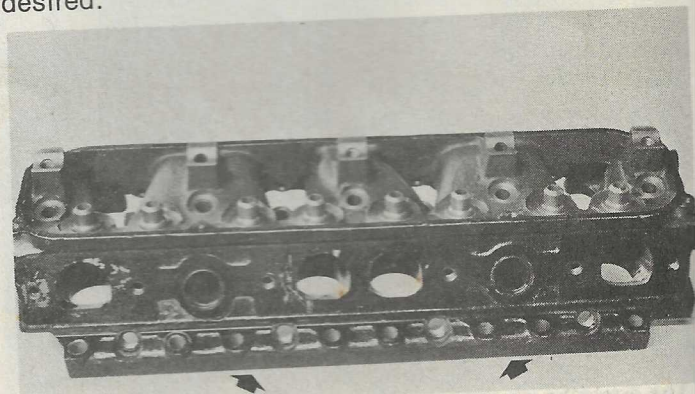


Chrysler P-part valves are not expensive and are made of premium material. The intake valve uses the single-lock groove, while the exhaust valve still uses the pass-car multi-groove lock. The exhaust valve has been hard tipped to minimize wear on the street or at the track. Both valves have 3/8-inch stems and have been hard-chrome flashed to reduce guide wear.

as demonstrated every weekend at tracks all over the country. However, the "B" is just not in the same league with the current breed of Pro Stock engines. The wedge "B" will never be a consistent heads-up winner in classes with the Hemi or the Cleveland Ford. This is due primarily to the cylinder head ports.

The intake and exhaust ports flow well enough to build a super street engine. Some of the more "gifted" engines can suffer from too much port cross-sectional area for optimum low-rpm torque levels on the street. The "B" engine port shape is virtually ideal for street and bracket-race performance. The 440-hp heads can be bolted on without any porting, and will usually produce an engine that is capable of putting a stock-bodied car into the low thirties (assuming the proper associated components are also fitted).

The stock port design is also sufficient to allow good elapsed times at the drags with a moderately-to-highly-modified engine. A 3000- to 3500-pound car can run mid-to-low tens. This is often fast enough to satisfy even the most ardent drag racing fan. However, very extensive modification to both the intake and exhaust side must be performed if further performance is desired.



The exhaust side of this one-of-a-kind casting has the W-D-shaped port. Unfortunately, initial flow tests didn't show much improvement but this doesn't mean that the project has been scrapped completely. Note the extra-thick foot for the head bolts.