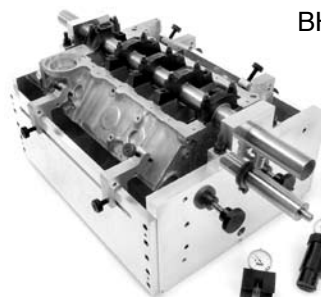


## An Introduction To Engine Blueprinting Using BHJ Fixtures

Blueprinting has become an industry standard for optimum performance and longevity in high performance building of both factory and aftermarket engine blocks. BHJ's world-renowned engine Blueprinting Fixtures introduced an entirely new level of precision and performance for engine builders and race teams of all sizes. Today, BHJ's Blueprinting Fixtures continue to provide machine shops using commonly-found machinery with the accuracy normally associated with much more costly CNC engine machining centers. The examples shown below illustrate the process of blueprinting a performance engine in the correct order, using BHJ Fixtures.

### Line Boring The Mains & Cam Tunnel



BHJ's Line Boring Fixture bores main bearing or cam bearing bores in a wide variety of blocks. Using a common vertical mill, this fixture corrects the cam tunnel relationship to the crankshaft, thus eliminating timing inconsistencies and

increasing valvetrain performance and longevity. Aftermarket caps are easily sized as well, using the main boring setup. (Page 4)

### Indexing The Lifter Bores



The Lifter-Tru Kit allows lifter bore positions to be corrected in an engine block in front-to-rear and up-and-down orientations. The Kit also restores the correct lifter bore angle as referenced from the cam-crank centerline. Also

popular for installation of Lifter Bore Sleeves. (Page 10)

### Aligning The Bellhousing



BHJ's Dowel-Tru Kit quickly and easily corrects bellhousing dowel-hole locations by placing them in the correct relationship to the crankshaft centerline.

The Dowel-Tru eliminates guesswork and renders offset dowels obsolete. (Page 11)

### Indexing The Cam Tunnel



For shops equipped with an align-boring machine, the Cam Tunnel Alignment Fixture properly indexes the cam tunnel parallel to, and in line with, the crank centerline. A "cam-tunnel-only" alternative to the Line Boring Fixture. (Page 5)

### Indexing The Cylinder Heads



The Head-Tru fixture corrects intake-port misalignment by establishing the correct intake-port running centerline, resulting in accurate port matching to the intake manifold from one head to another. This gives the correct starting point to zero the layout on every head.

Additionally, the Head-Tru allows for scribing the cylinder bores on the deck surface of the head, for consistent combustion chamber layout. (Page 20)



### Trueing The Deck Surfaces



BHJ's Blok-Tru corrects improperly-machined deck surfaces, by re-establishing crank-centerline parallelism and a true 45-degree angle to the cam-crank centerline. (Page 6)

### Trueing Bore & Head Dowel Locations



The Bor-Tru establishes proper cylinder bore location over the correct crankshaft centerline, as well as at the blueprint-correct center-to-center distance from one another. Cylinder head

dowel locations can also be re-positioned for proper chamber-to cylinder alignment. (Page 9)

### Blueprinting Support Parts

All BHJ engine block Blueprinting Fixtures shown above utilize our 2" Precision Support Bar and Main Bearing Bore Adapter Rings. The Adapter Rings mount into the front and rear Mains to position the 2" Bar, which establishes the crank shaft centerline as the zero-datum point for setup and operation of these Fixtures. The Bar and Rings are sold separately. (Page 5)