

2009
MARCH



ENGINE BUILDER

Don't Miss!
Spotlights
Pg 71

Rebuilding the **Chrysler Hemi**

Also:
Timing Chains, Pulleys & Gears
Racing Oils and Additives
Stroker Engines Resource Guide

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ifier) which will interfere with the ZDDP function during break-in.

- Proper ZDDP level in the break-in oil is critical for controlling the break-in wear. Zinc (from ZDDP) concentration of 2,500 ppm (parts per million) will provide proper protection for the cam, lifters, and valve train during break-in. For full temperature range protection from cold start to hot operation, be sure to use a ZDDP product with both primary and secondary ZDDP.

- Be sure to set the ignition timing, check for fuel delivery and prime the oil system if possible before firing the engine. It is best for the engine to fire immediately and to run without interruption in order to promote proper break-in.

- Once the engine fires, follow the recommendations from the cam manufacturer on engine rpm levels and running time for the break-in period.

- After the break-in period has been completed, change the oil and



Les Frickshun's Zinc Pro Pack allows engine builders to treat two engines per quart.

the filter.

- Following break-in, flat tappet cams and strongly loaded roller cams must use oils that contain the proper level of ZDDP anti-wear protection or cam/lifter/valve train damage may result. The ZDDP concentration needed is determined by the valve spring

pressure and engine rpm levels. For normal operation in a street driven flat tappet cam or performance roller cam engine, 1,600 ppm of Zinc will provide the proper level of protection. For high performance and racing engines, 2,000 ppm of Zinc is preferred.

- Following proper break-in, modern passenger car oils (conventional or synthetic) can now be used in your street performance application but will need the proper ZDDP concentration.

- Racing oils should only be used for the racing applications they were intended. Race oils lack the necessary additives for longer drain intervals and detergents to keep street performance engines clean. **EB**

For a list of racing oil and additive suppliers, visit our Online Buyers Guide at www.enginebuildermag.com.

SCHUMANN'S DYNAMIC PERFORMANCE™

INDUSTRY OIL PUMP TEST STAND!



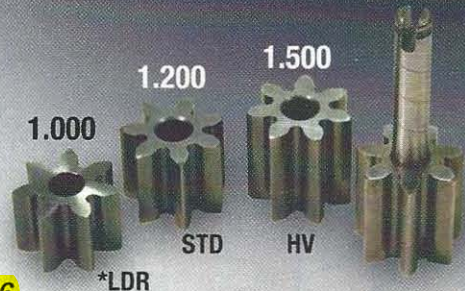
- Gallons/Minutes
- Pounds Per Square Inch
- 14 SHIFT ON THE FLY R.P.M. SPEEDS. C/CC Rotation
- BY - PASS VALVE P.S.I.
- 5 MINUTE TOTAL TEST CYCLE TIME!

- 1/10 OF 1 GALLON FLOW ACCURACY!
- .001% P.S.I. GAUGE
- OIL AND PICKUP SCREEN R/D

\$3750

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SCHUMANN INTRODUCES NEW OIL PUMP TEST STAND

The oil pump is the heart of the engine's lubrication system. Consequently, it is important to make sure the oil pump is producing the correct pressure and flowing to specifications. Schumann's new Oil Pump Test Stand now gives engine builders the ability to check these parameters, as well as to break-in new pumps before they are installed.

Vern Schumann says his new test stand is an industry first, and is capable of checking oil pump pressure and flow at 14 different speeds. The gauging used on the test stand is accurate to within

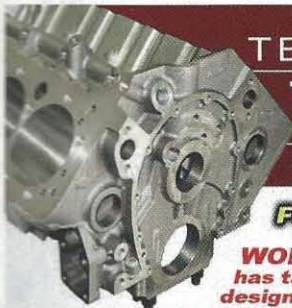
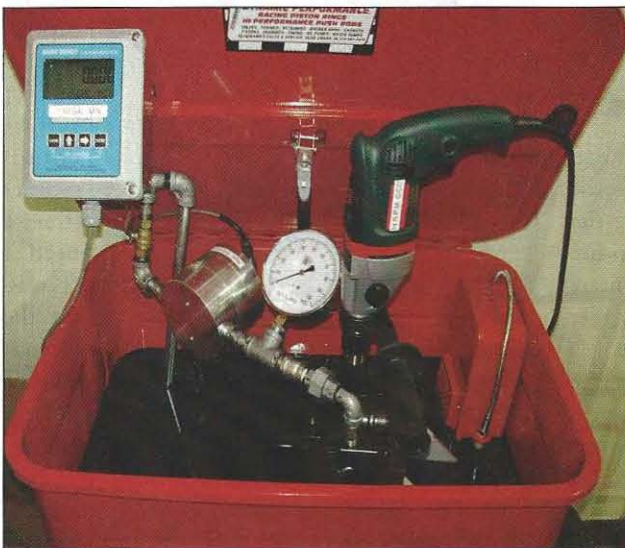
0.001% psi (pounds per square inch), and of measuring flow to 1/10 of a gallon per minute. "It's as accurate as industrial test equipment that costs \$250,000," said Schumann. "Our price will be only \$3,750, making it

affordable to almost any engine builder."

The oil pump test stand has fixturing to accommodate a variety of different oil pumps, and takes about three minutes to run a complete dynamic flow test on the pump. The results of the test can be written down and handed to a customer on a spec sheet for the oil pump. The test stand can reduce engine warranty claims that sometimes result from oil pumps that are not delivering sufficient flow.

The new Oil Pump Test Stand was unveiled at the Race & Performance EXPO in St. Charles, IL on February 14, 2009.

For further details, contact Vern Schumann at Schumann's Sales & Service Inc., Blue Grass Iowa, phone 563-381-2416.



TECHNICAL BULLETIN Oiling System File #M2TB092408

THE ALL NEW MOTOWN II

WORLD'S BEST SBC BLOCK - HERE'S WHY

FOR IMMEDIATE RELEASE

WORLD PRODUCTS has taken the tried and true SBC design and continued its evolution to improve on the previous designs and greatly improve its capabilities.

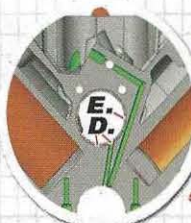
Illustration 1)

World Products re-engineered the oiling system to improve lubrication and redirect it to critical areas. This new design incorporates priority main oiling which lubricates the main bearings first, then the camshaft and lifters.

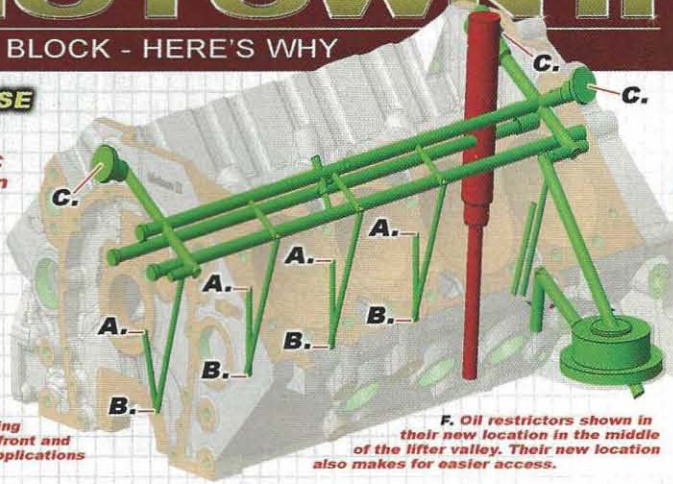
Another benefit of this new design is the distributor is now at the end of the oiling cycle. This is a significant improvement because if the distributor is improperly fitted or the O-rings are damaged or missing an oil leak is inevitable. This leak would now happen only after all the other critical components have been lubricated instead of before as in the OE design.

Illustration 2)

The OE factory oiling holes in the cam journals located at 6 o'clock, were moved in the new design to the 5 o'clock position. This was a necessity as camshafts requiring high spring pressures would force the camshaft down, effectively closing off the oiling hole when it was in the 6 o'clock position.



D. New 5 o'clock location of cam journal oiling holes replaces inadequate OE position of 6 o'clock (gray dotted lines)
E. Cam journal can be machined to accommodate 55mm cam bearings

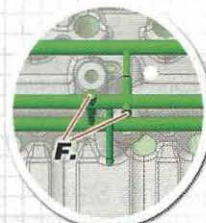


A. Relocated cam journal oiling holes
B. Priority main oiling
C. Integral bosses front and rear for dry sump applications

F. Oil restrictors shown in their new location in the middle of the lifter valley. Their new location also makes for easier access.

Illustration 3)

The oil restrictors are now located in the middle of the lifter valley to equalize oil distribution. An important advantage of this move is that you no longer need to remove the transmission, converter or clutch and flywheel to access the oil restrictors.



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