

STUDEBAKER

The R-3 Engine

AFTER A BATCH of stock car records had been set last August by Studebaker's new Avanti, the ballyhoo surrounding the engine which powered the record car was deafening by its absence.

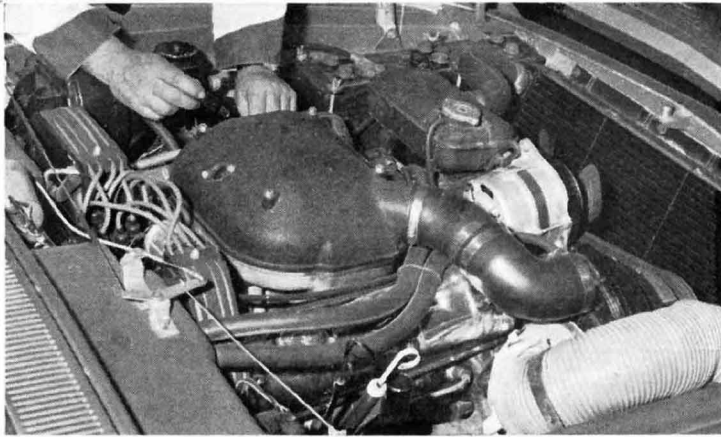
The R-3 engine which was used,

planned as the highest output powerplant to be available in the Avanti, remained unmentioned for some time. Studebaker people had enough to do, just building the car and talking about the 240-bhp R-1 unsupercharged and 280-bhp R-2 supercharged version of

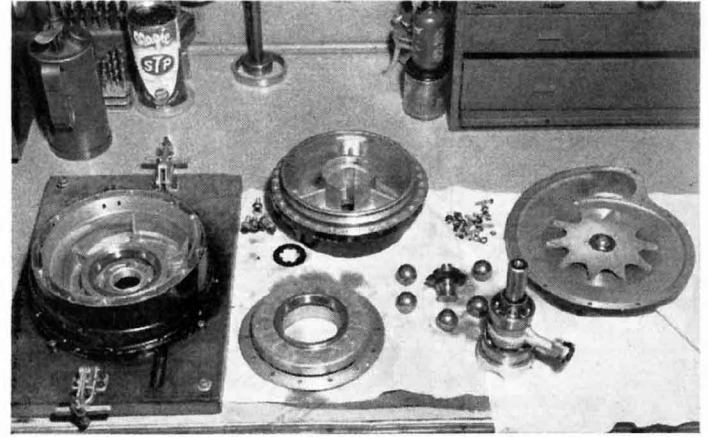
the 289-cu. in. power plants.

Backstage bickering, however, broke out over whether the R-3 equipped car was, in fact, stock. None were being built. Studebaker and the United States Auto Club finally got together, re-examined the book and the Bonneville results, and found that the speeds attained were still records, but in different classes. The company, meanwhile, was pressing its Paxton Prod-

THE R-3 ENGINE, installed in Avanti, has carburetor enclosure dominating top side. This box equalizes pressures.



DISASSEMBLED SUPERCHARGER shows scroll housing at left, oil pump drive unit and impeller and cover at right.



ucts Division in Santa Monica, Calif., to get some of the bigger engines built.

Development work on the R-3, during this period of limbo, had continued. What had been a bored-out engine of 299.4 cu. in. in the three record cars evolved to a further-bored 304.5 cu. in. (3.655 x 3.625 in. bore and stroke).

Compression ratio got a slight increase, to 9.5:1, and the Carter AFB carburetor was installed in an enclosed

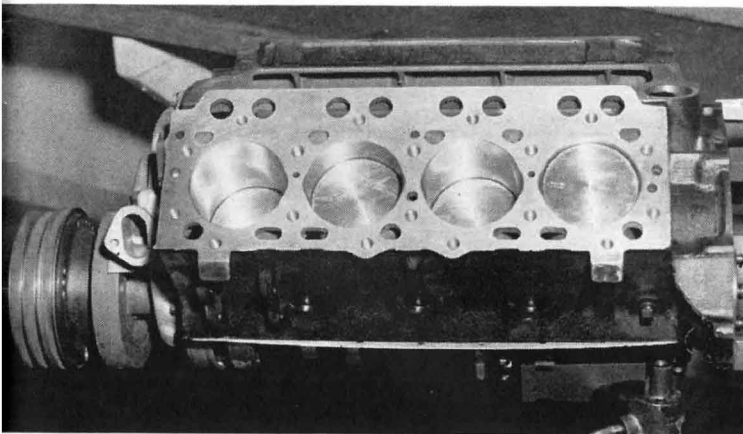
box for full pressurization. Extensive work on the valve area was done, enlarging intake valves from 1.65 to 1.75 in. and exhaust valves from 1.53 to 1.62 in. Porting was correspondingly enlarged and polished and special Y-type headers were used. Camshaft timing was altered from 17-63-56-24 to 38-90-90-38°.

Other changes included a specially balanced and magnafluxed crankshaft,

forged pistons and heavy-duty, high-capacity oil pump. On the R-3, the fully-shielded double-breaker ignition is transistorized. A realistic estimate of horsepower is 315-325 bhp.

While Paxton Products is now building the R-3—and it is catalogued as a special order option by Studebaker—production, by April 1, had not kept pace with the orders, according to Paxton president Andy Granatelli. ■

MILLED BLOCK has scallops at each end of cylinder bores to allow more room for larger valves used on R-3 engine.



HAND-FINISHED combustion chambers are evident in this view of head. Valves are lighter, pistons are heavy duty.

