

Report on Engine Build and Dynamometer Testing for Vortec Pro

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Introduction and Scope of Work

Engine BBC 62467 was to be measured and dynamometer results verified and photography support to confirm same with dynamometer results graphed in comparison. The dynamometer testing was done on 12/22/2017 at Vortec Pro facility where the engine dynamometer calibration was also verified before final testing was done to generate data and graph.

Engine BBC 620467 (Customer Name is on MJ File)

Block: GM casting number 3999289

Bore: Measured to be 4.310”

Stroke: GM Crankshaft number 7416 Measured to be 4.000”, counterweights reworked

Pistons: Mahle with anodized ring lands pn BBC395310D28, CR - 10.3:1

Cylinder Heads: GM casting number 781 oval ports

Camshaft: Iskenderian pn396277 grind Z-77

Specs: FT, 264⁰ @ 0.050”, 108⁰ LSA, Lift 0.590” at zero lash, 0.028” running lash (hot).

Dynamometer Calibration verified on 12/22/2017

SuperFlow 901 dynamometer torque calibration was verified to be well within specs by this author. Data within +/- 0.200 lbs-ft torque.

Testing Parameters

After initial break-in and tuning, three dyno pulls were run and averaged for analysis. The dyno tests were run from 5000RPM to 6600RPM (MJ2141 and MJ2143) on two tests and one from 5000RPM to 7000RPM (MJ2142). Graphics of the three tests are attached to this report with notes

Test Fuel

Test fuel was measured for a SG of 0.733 and was 91 octane pump gas. The weight per gallon of the described fuel was 6.113 lbs/gallon.

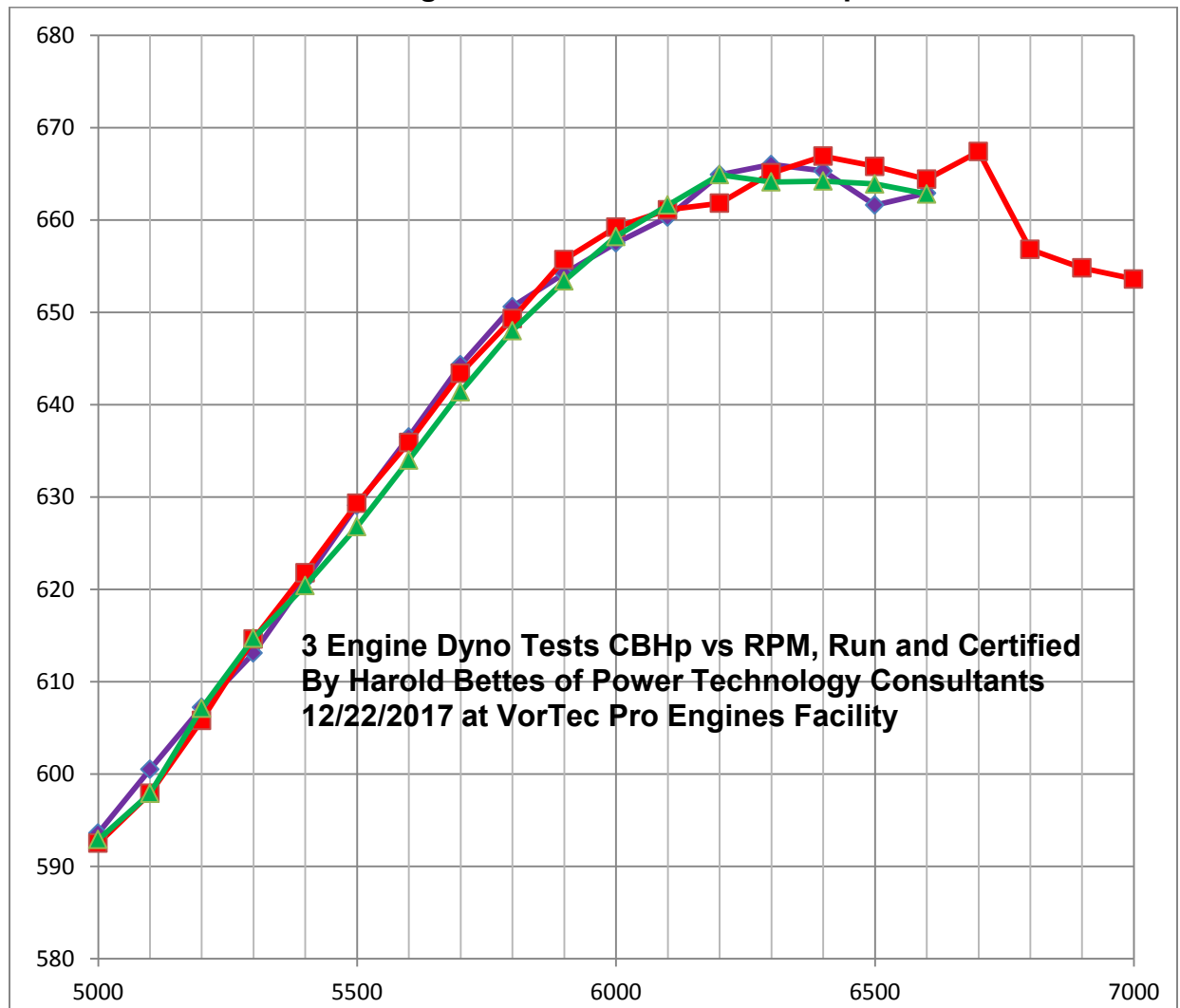
Test Timing

Best results in testing used 37⁰ BTDC ignition timing.

Graphic Comparison of Engine Dynamometer Tests

Corrected Brake Horsepower vs RPM

Three tests run with no changes from one to another except maximum RPM



Box (red) = MJ2142, Diamond (purple) = MJ2141, Triangle (green) = MJ2143

ISKY RACING CAMS
(CAM SPECIFICATIONS)

| PART NO. | APPLICATION | GRIND | TYPE | CAM LIFT | VALVE LIFT | 050 DUR | LOBE DUR | CENTER | VALVE LASH HOT |
|----------|-------------------|------------|-------|----------|------------|---------|----------|--------|----------------|
| 396270 | CHEVY V-8 396-402 | 270 HL HYD | HYD | .293 | .510 | 270 | 216 | 114 | 0 |
| 396296 | 427-454 CU. IN | 296 HYD | HYD | .291 | .515 | 296 | 234 | 114 | 0 |
| 396286 | " | 286 HYD | HYD | .291 | .510 | 286 | 224 | 108 | 0 |
| 396306 | " | 306 HYD | HYD | .291 | .510 | 306 | 244 | 108 | 0 |
| 396266 | " | Z-66 | SOLID | .298 | .520 | 268 | 228 | 108 | .020 |
| 396245 | " | Z-45 | SOLID | .303 | .530 | 278 | 240 | 108 | .018 |
| 396233 | " | Z-33 | SOLID | .322 | .560 | 290 | 250 | 108 | .030 |
| 396255 | " | Z-55 | SOLID | .338 | .590 | 300 | 254 | 108 | .028 |
| 396277 | " | Z-77 | SOLID | .342 | .590 | 310 | 264 | 108 | .028 |
| 396289 | " | Z-89 | SOLID | .366 | .630 | 304 | 264 | 108 | .028 |
| 396288 | " | Z-88 | SOLID | .372 | .650 | 314 | 272 | 108 | .028 |
| 396290 | " | Z-90 | SOLID | IN.342 | .595 | 314 | 264 | 110 | .024 |
| 396295 | " | Z-95 | SOLID | EX.363 | .635 | 334 | 274 | 108 | .022 |

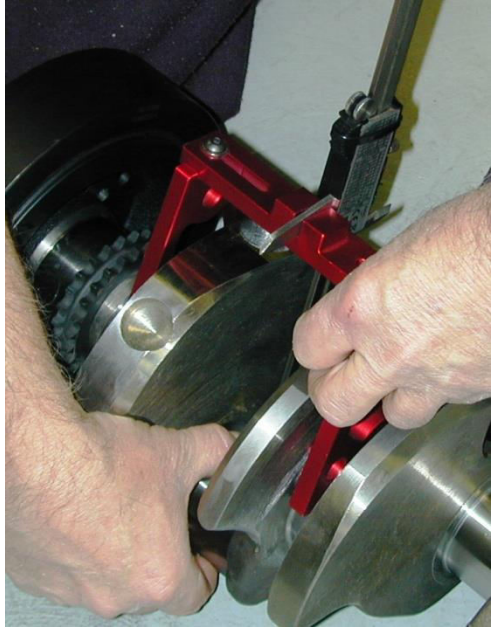
Cam Specs



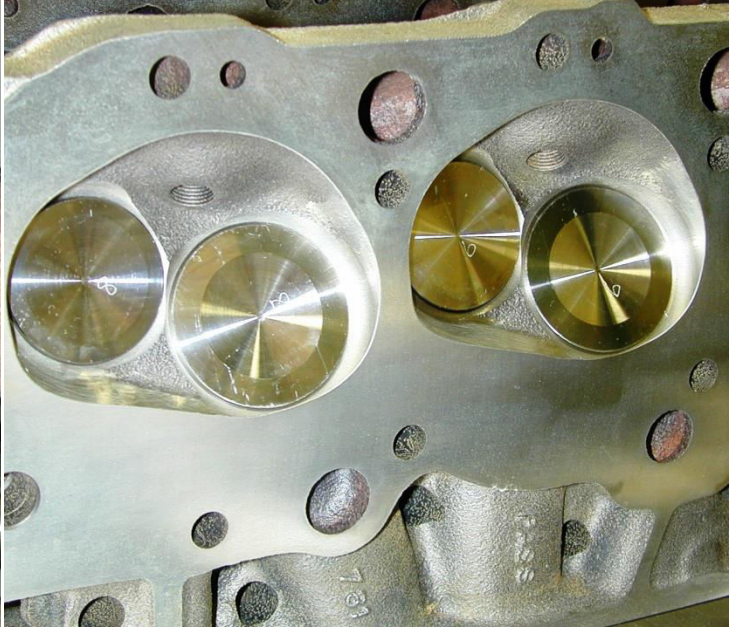
Crank number



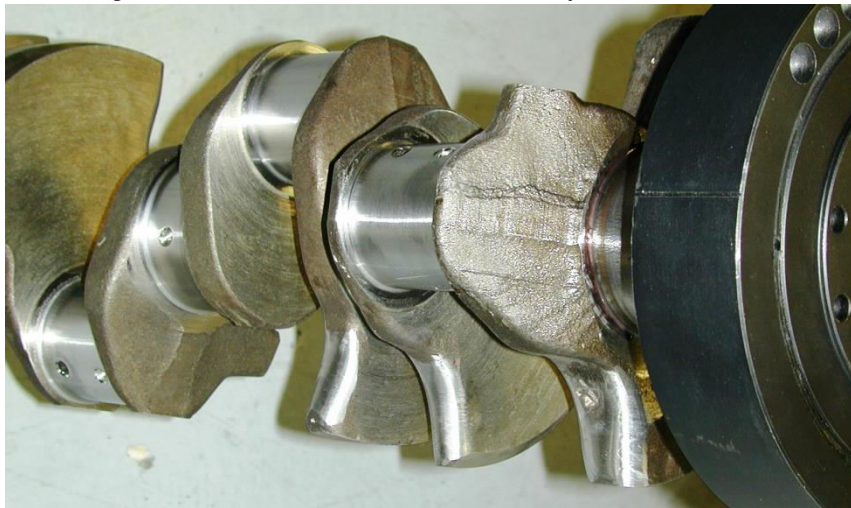
Mahle Pistons



Measuring Crank Stroke



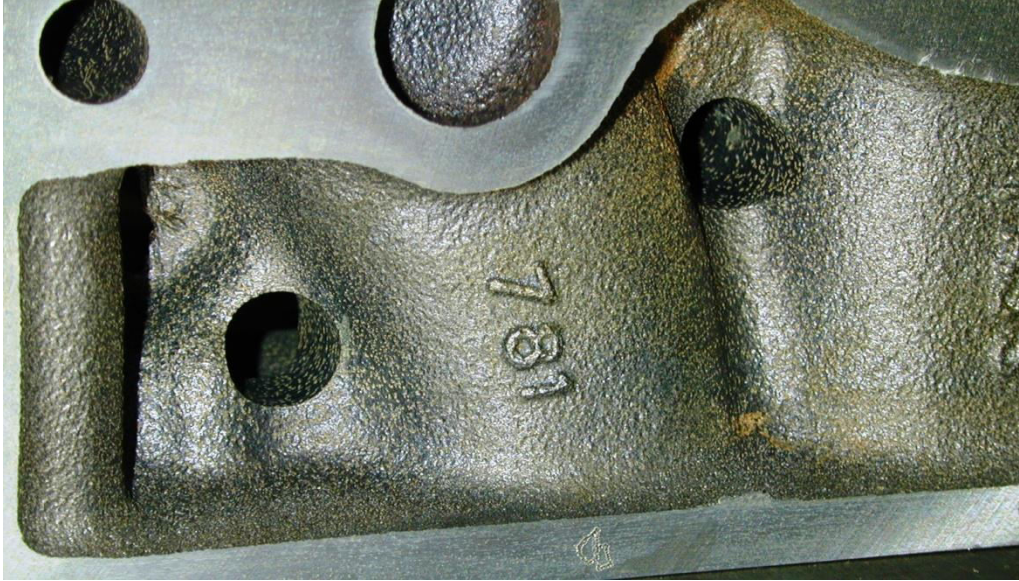
781 Cylinder Heads



Reworked and Balanced Crank



Block Casting Number



Cylinder Head Casting number closeup

EOR/PTC/HB2/1/2/2018