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Santa Fe Springs, California

BEST PULL (TEST #12)

(30-degrees, 68/76 jets, Pertronix, big pipes,
mechanical secondaries, air cleaner base)

@ RPM	CORRECTED TORQUE	@ RPM	CORRECTED HP
2800	459.6	2800	245.0
2900	466.2	2900	257.4
3000	471.6	3000	269.3
3100	476.8	3100	281.4
3200	479.8	3200	292.3
3300	482.1	3300	302.9
3400	483.2	3400	312.8
3500	483.0	3500	321.8
3600	482.1	3600	330.4
3700	481.1	3700	338.9
3800	477.6	3800	345.5
3900	472.8	3900	351.1
4000	468.0	4000	356.4
4100	464.5	4100	362.6
4200	460.4	4200	368.2
4300	457.4	4300	374.5
4400	453.3	4400	379.8
4500	447.5	4500	383.4
4600	443.8	4600	388.7
4700	439.7	4700	393.5
4800	436.4	4800	398.9
4900	433.2	4900	404.2
5000	429.6	5000	409.0
5100	420.8	5100	408.7
5200	411.6	5200	407.5
5300	399.2	5300	402.9
5400	389.7	5400	400.7
Average	454.5	Average	351.4

set at 36 degrees. With the water and oil temperatures up to safe operating levels, we made the first of four baseline pulls, starting at 3,000 rpm and ending at 5,400. With stock points in the distributor, the engine ran unexpectedly smooth. Peak horsepower was 349.8 at 5,100, the average at 304.6, and torque was 428.9 lb-ft at 3,000 rpm. With peak torque occurring at the start of our pull, we lowered our starting rpm to 2,500 to see if the torque maxed out earlier. It did. On our fourth pull, with the rings seated, both hp and torque finally stabilized, with hp of 355.7 at 4,900, and torque of 433.7 lb-ft at 2,600. Brake Specific Fuel Consumption (bsfc) was a bit rich at .51.

We were getting a dip in the hp curve right at peak rpm on every pull, sounding

a bit like the dyno releasing its grip on the engine, allowing it to rev faster. Not knowing what it was, we decided to change out the points to a Pertronix Ignitor II and matching Flame Thrower II coil. It seemed to work, with hp jumping nearly 10, hitting 365.5 at 5,100, and torque reaching 436.4 lb-ft at 2,900 rpm. Average hp was now 310.6 and torque was 402.2. We were using the fuel better, dropping the bsfc to .50.

Torque was peaking too low, and we finally noticed that the vacuum secondaries on the carb weren't opening until the end of the pulls. So we switched out the stock control spring for the lightest in the Holley kit, a cut yellow spring. That worked — power jumped to 393.5 at 4,900, and peak torque rpm was more realistic, coming in at 448.4 lb-ft at 3,100. Average hp was now 329.7 and torque at 425.7. Bsfc's dropped to .49, telling us we were utilizing fuel better yet.

A .49 bsfc is still too rich, considering the compression ratio, so we leaned the primary jets from 70s to 68s. It worked, with hp hitting 395.0 at 5,200, and torque reaching 449.5 lb-ft at 3,100. Average hp went up a little to 330.3 and torque to 426.5. Bsfc's dropped to a friendlier .47.

Next, we advanced the timing from 36 degrees to

39. The CJ didn't like that change, with hp falling back to 392.5 at 5,100 and torque decreasing to 446.6 lb-ft at 3,100. Averages fell respectively to 328.8 hp and 424.5 lb-ft. The bsfc really told the story, rising to .48 telling us the engine wasn't utilizing the fuel as well.

We fastened a small white zip tie to the vacuum secondary linkage to watch its opening, and even though it was better with the cut yellow spring, the secondaries weren't opening at the start of the pull, which we believed was compromising our results. So we used another zip tie, on the driver's side to link the primary and secondary levers together, making the secondary operation mechanical now. Even with our timing at 39 degrees, torque really jumped, reaching 458.8