

The 2012 David Vizard,

How to build Horsepower Seminar

**Sponsored by K&N Engineering
Hosted by Universal Technical Institute**

**Attend what promises to be the best transfer of knowledge
and bench racing in Southern California on the weekend of
April 21st and 22nd.**

The Principle Speaker will be tech author and engine guru David Vizard.

Recognized as a world class authority on the design, testing, and production of high output engines, we have arranged for a DV seminar at Universal Technical Institute in Rancho Cucamonga, CA. The weekend will start with a plant tour of K&N in Riverside CA. the evening of the 20th. This will be the kickoff of the seminar with registration, refreshments, and plenty of time for one on one discussion with David and guest speakers.

This year David has pulled together a great line up of guest speakers to cover a wide range of topics. Subject to last moment changes those so far (and we are adding right up to the last moment) planning to be there includes:

- David Woodruff of Design Dreams LLC, supporting our program with a Computational Fluid Dynamics (CFD) presentation. Here, for probably the first time, attendees' will get to see a viable small shop 'virtual' flow bench, and 'virtual' wind tunnel.
- Roger 'Dr. Air' Helgesen, and Bryce Mulvey of Dr. J's porting will discuss 'Deciphering what your flow test results may be telling you'.
- Bob Verbranic from The Carb Shop will be covering 'High Performance Carburetion – isolating the most common problems seen at the drag strip'.
- Rick Sperling and Tony Mamo from Air Flow Research cylinder heads will be covering 'How best to get the most performance from AFR's Products'.
- Mike McClelland from Professional Products will be along to present 'Fuel injection made simple. How to make the most of an EFI investment'.
- Bob Scheid of McLeod Clutches to discuss 'Flywheels for drag racer and road racer. How to make the most of the potential reduction of Moments of Inertia'.

Friday April 20th, 5:00PM to 9:00PM

We will be hosting an open house for attendees of the “HTBH” Seminar at the K&N Plant in Riverside California. For those who can attend it will be “pre-registration” for the weekend events. We will have an extensive guided tour of the K&N Manufacturing facility, Testing Lab, and R&D facilities. Afterwards we’ll have plenty of time for a meet and greet of presenters and one on one time for bench racing and networking.

Saturday April 21st, Day #1 9:00 AM to 5:00PM (Lunch break about 12.30 and coffee breaks AM & PM)

Subjects:-

- 1) The basics of every speed secret identified.
- 2) Making the most of compression ratio and how many university test books are in error.
- 3) The real worth of compression to Pro Stock and similar engines.
- 4) The absolute importance of maximizing intake valve capability.
- 5) Identification of the best intake to exhaust ratio explained – finally!
- 6) Valve sizes V’s bore sizes for a specific application (street, street/strip, race)
- 7) The importance of valve seats and their overall effect on output.
- 8) Valve shrouding and how to drastically reduce its negative effects on flow.
- 9) Idealized port forms, port bias, and swirl.
- 10) Putting port velocity in its true prospective (it’s a lot more important than even most pro’s believe).
- 11) The importance of good heads graphically demonstrated.
- 12) How to apply the benefits of idealized ports to real world heads.
- 13) Port velocity mapping and velocity gradients in practice.
- 14) Porting tools that will cut R&D flow bench time.
- 15) Porting for profit – popular performance heads you can make \$50 - \$60 an hour porting.
- 16) The flow bench – interpreting results correctly.
- 17) Where the air really goes – computational fluid dynamics.
- 18) The virtual flow bench – two hour talk by David Woodruff on affordable CFD for typical engine shops.

After hours discussions (Saturday evening).

There will be a Dyno demo of AFR cylinder heads and hydraulic lifters produced by Morel lifter and show power difference (in-cylinder and port pressure measurement on this engine). Discussion and analysis of in cylinder/port pressure measurements.

General discussion with David Vizard and tech guests David Woodruff, Joe Sherman, Rick Sperling, Tony Mamo, Bob Scheid, Roger Helgesen, Bryce Mulvey, Ben Strader, Mike McClelland, Jim Davis, Bob Verbranic. All of these experts will be on hand to answer your questions up to 10:00PM.

End of day 1

Sunday April 22nd, Day #2 9:00AM to 5:00PM (Lunch break about 12:30 and coffee breaks AM & PM)

- 1) Basic valve train dynamics explained in very easy to understand terms.
- 2) What it takes to make a dynamically stable valve train.
- 3) The consequences of valve bounce and valve loft explained.
- 4) Why spring choice is critical and how to make better first choices on this critical issue.
- 5) The effects of valve mass and how to save \$300 on your next all out pushrod valve train.
- 6) Avoiding the 3 stealth rocker mistakes (and 98% of all pro engine builders make them) that can cost 20 hp on a 750 horsepower engine.

- 7) It is so often said that the intake closing point is the most influential valve train event. Not so – learn the real facts here – it will open your eyes to power increase you may not have fully tapped into.
- 8) The effects of Lobe Centerline Angle changes – or – what the cam companies are not telling you that you really need to know.
- 9) A 20 hp tip on cam selection for domestic pushrod V-8's such as small and big block Chevy, etc.
- 10) Crevice volumes and the negative effects they bring about.
- 11) The real truth about gapless top rings.
- 12) Induction pitfalls – making the most of the air available – calibrations tricks – ram air pitfalls.
- 13) Filtration – synopsis of Friday night's talk.
- 14) Induction and tuned lengths – doing it the hard way and the easy.
- 15) Exhaust sizing made really easy.
- 16) Effects of primary and secondary exhaust dimensions on V-8's – dyno results.
- 17) Exhaust computer prediction accuracy – Dynomation, Performance Trends Engine Analyzer, Pipe Max.
- 18) Engine geometry – bore/stroke and rod/stroke ratios – what's best.
- 19) Engine rotational mass and its effect on performance – and some of these numbers will come as a surprise!

David has over 45 years of performance engine design and over a Million Dollars' worth of dyno testing experiences to share. Two full days of high performance engine building knowledge and the chance to meet with industry leaders to share our common passion for only \$550.00 (incl. lunches Sat & Sun, plus coffees, teas, etc)

To register your place in this world class seminar visit the web link below, and do yourself a favor and check out David Vizard's credentials at www.davidvizardseminars.com.

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