Our Full Product Line:

Products listed for "Win XP - 10" are compatible with Windows XP, Vista, Win 7, Win 8, Win 10.

Engine Simulations

Engine Analyzer v3.4, Win XP - 10

Software for your personal computer to simulate an engine or engine modification. It lets you try "what if" with cams, heads, intakes, superchargers, etc. and see the effect on torque, HP, air flow, volumetric efficiency, etc. "Its like having a dynamometer right in your computer."
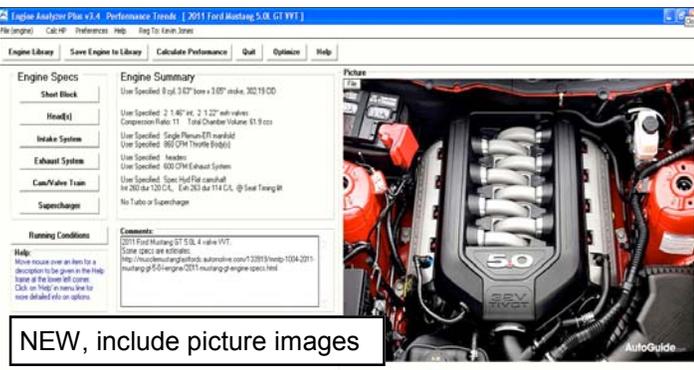
NEW, include picture images
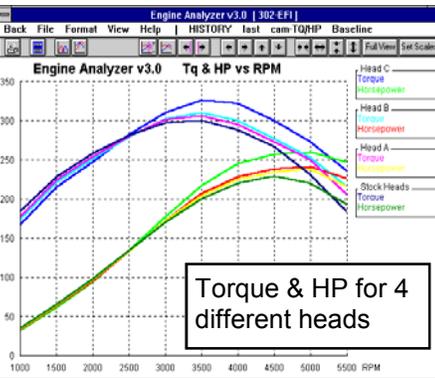
Torque & HP for 4 different heads

Over 70 inputs including comp. ratio, valve size, valve flow efficiency (calculated from flow bench data), runner dimensions, cam lift and events, weather conditions, supercharger and turbo specs, nitrous oxide, etc.

Over 60 outputs including comparison plots of tq & HP or cam profiles, "dyno" printout showing torque, HP, air flow, fuel flow, vol eff, displacement, runner recommendations, idle vacuum, etc. Automatically sends power curves to proper versions of Drag Racing or Circle Track Analyzer; or Fuel Economy Calculator, automatically finds best port, runner, header and cam specs; has thousands of preloaded specs for particular heads, cams, intakes, even complete engines. Try the FREE demo from our website.

Eng Analyzer Pro v3.9 B, Win XP - 10

The Pro is like our standard Engine Analyzer, but with more detailed inputs and outputs. It comes in original Professional version or *even more advanced Enterprise Edition*, and is recommended for professional engine builders and engineers. Over 120 main inputs including most Engine Analyzer inputs and options like entering full valve flow curves (automatically from Port Flow Analyzer v3.5) and detailed cam profile data from Cam Dr or Cam Analyzer measurements. Other inputs include valve train wts, spring rates, turbo A/R, spark curve, rod length, nitrous oxide details, more detailed runner specs, etc.

Over 100 secondary inputs to calculate main inputs (ex: port ccs & port length to calculate avg. port diameter).

Over 100 calculated results, most which can be plotted

Tq for 36 combos of header length and diameter

including Torque, HP, boost pressure, volumetric efficiency, spark advance, fuel flow, engine friction, pumping work, IMEP, BMEP, actual air flow CFM, valve toss, etc. Plot and compare details like cylinder pressure, cylinder temperature, theoretical vs actual valve position, piston thrust, piston-to-valve clearance, valve "clash", piston acceleration, runner pressures & velocities, valve flow areas, push rod forces, etc.

Watch piston to valve clearance
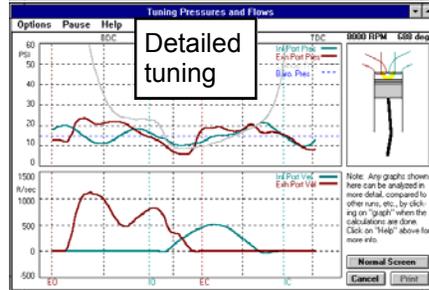
Detailed tuning
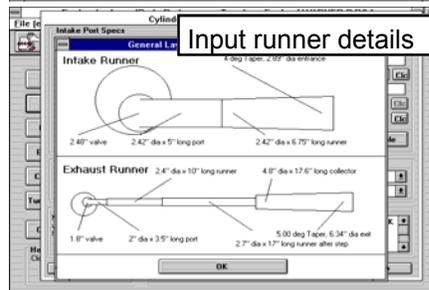
Chain calculations let you try hundreds of combinations at once to quickly find promising combos. Reads head files directly from our Port Flow Analyzer. Specs for hundreds of example specs already preloaded.

Input runner details

Download a FREE demo from website.

Engine Simulations, cont

Engine Analyzer 'Plus' Win XP - 10

Add 20 "Plus" features to your Engine Analyzer v3.4: variable valve timing, more fine tuning of cam profiles including matching seat or .200" lift durations, more graph types and print options, more alternate fuels (including E85 and diesel), more RPMs in output, estimate piston-to-valve clearance, use millimeters for dimensions, use a full head flow curve or import a curve from our Port Flow Analyzer, customize reports and graph colors for your needs or add a company logo, and use the interactive "Optimize" feature which lets you make changes on graph screen & instantly see effect on performance. Download std. Eng. Analyzer v3.4 demo. Click on Help, then 'Plus Features' for demo.

Pick and change most any spec to instantly see effect on torque & HP.
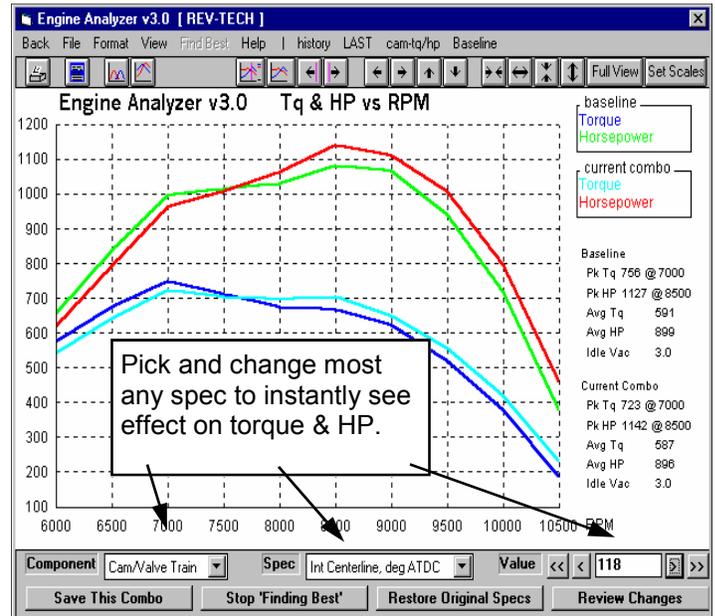
Engine Building Tools

## Port Flow Anlyzr, v3.5 C Win XP - 10

Lets you streamline the recording, calculating, saving, retrieving, reporting and graphing of flow bench data. Calculate port velocity, % exhaust/intake, flow coefficient,

Main Input Screen
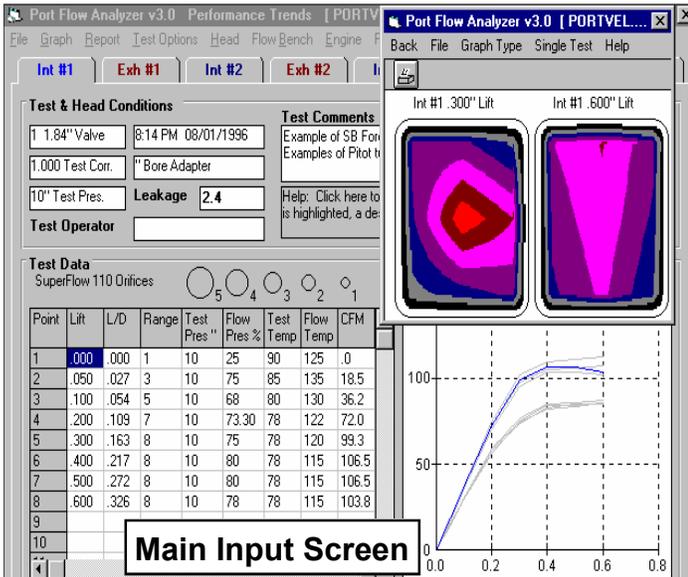
CFM corrected to most any test pressure, % max valve potential. Combine flow data with simple cam & engine specs for performance estimates. Use Super Flow FlowCom (tm) or our Electronic Interface for automatic recording of pressures, temperatures, CFM, test stability, swirl, tumble, & port velocity. Other options include data basing of head specs, search features to find past tests, new print


Screen to Read FlowCom Data.
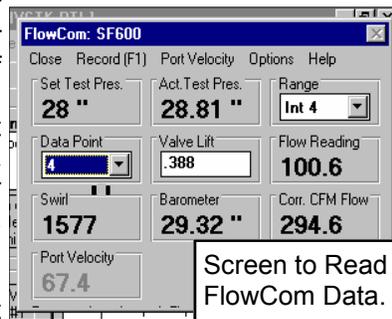
options, history log of recent tests and more. Our "Black Box" data logger can computerize your bench for $599.

Other flow bench accessories include our new Automatic Valve Opener, intake, mini intake and exhaust pitot tubes shown below, and swirl meters and tumble fixtures shown on the next page. Our 'Mini' Intake pitot tube can get in the smallest, shortest ports. We also have bore adapters, valve openers, and our most advanced version, we call the **Head Porter** version, which lets you use our Electronic Velocity Probes. These get into very tight places in the port and can be used for mapping out velocity (flow) around the edge of the valve.
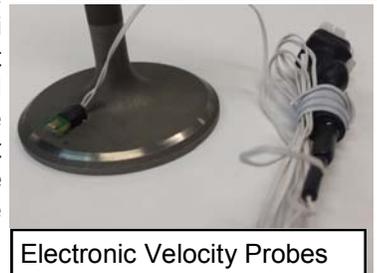
USB Black Box with 2 Temp Sensors & Switch

Electronic Velocity Probes

'Tight Bend' Intake Pitot Tube
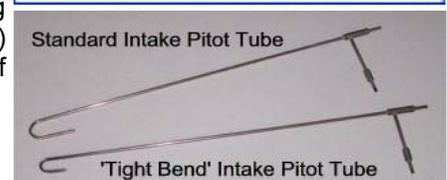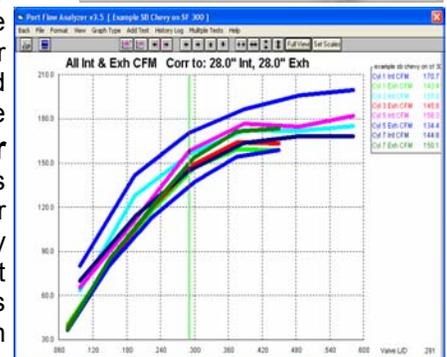
Engine Building Tools, cont

## Comp. Ratio Calc., Win XP - 10

The most complete compression ratio program available. Includes deck height, deck height clearance, rod length and piston compression height "stack up" calculations, cranking compression, dynamic compression, boring/ stroking utilities, professional printouts, etc. New **Plus Version** adds lots of extra features, including effect of leakage and cranking RPM on cranking compression, supercharger boost effect, piston Gs and rod bolt loads at a particular RPM. **Pro Version** adds even more, with ability to calculate piston dish or dome volumes from measurements, valve relief volumes, and more.
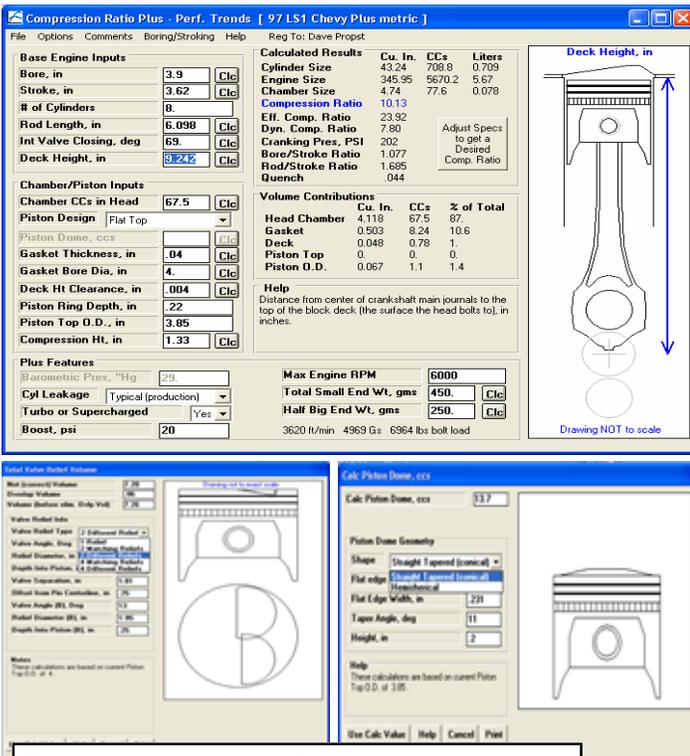
Calculating Valve Relief and Dome Volumes

EZ Flow System, Win XP - 10

This is a special kit which starts with our Port Flow Analyzer and Black Box electronics. It then adds some critical machined parts and streamlined orifice, plans and list of materials for you to build a professional, accurate and very fast flow bench for under $1000. Combined with our large capacity 6" PVC kit and your blowers, you can build a bench capable of 600 CFM or more for under $2500.
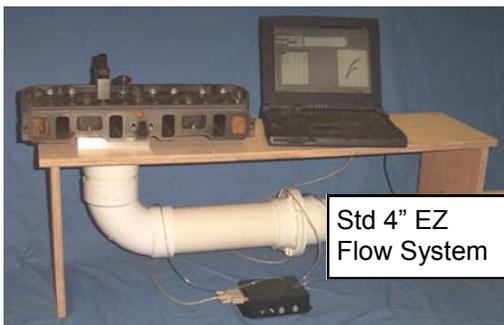
Std 4" EZ Flow System

Swirl Meter and Tumble Fixture

Swirl meter measures mixture motion and direction on flow bench. Low restriction design lets you measure flow and swirl at same time. See why heads with equal flow
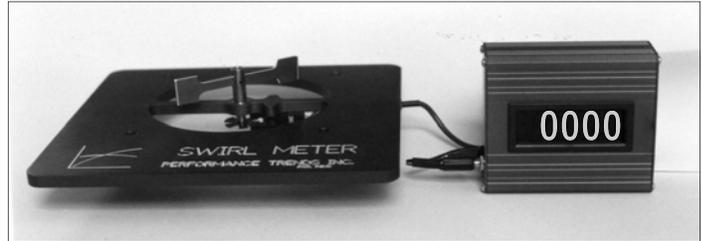
can perform so differently on the engine. Tumble fixture, computer outputs, max/min/avg features and other options are available. Port Flow Analyzer software can read swirl or tumble data automatically. Tumble fixtures are built to your specifications and are typically used for 4 valve heads.

Head bolts here

New, more adaptable, more affordable "Tumble Ball" fixture coming soon.

Bore Sleeve

Tumble Fixture
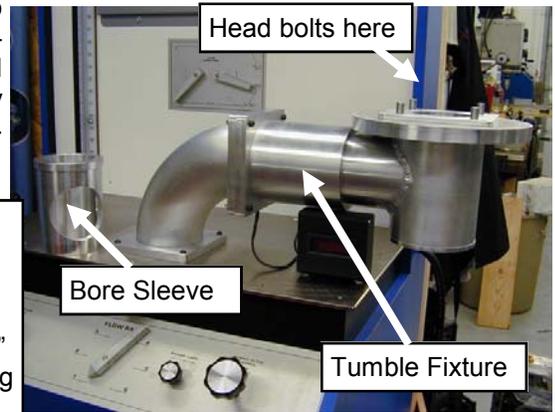
Fuel Injector Calc, Win XP - 10

The most complete program to estimate fuel injector sizing needs. Estimate fuel flow with HP & BSFC or Vol Eff and A/F, Program lets you correct for pressure & firing method differences, max safe duty cycle. Program can also estimate duty cycle and pulse width requirements over the engine's RPM range, and lists several part numbers for injectors meeting your requirements.
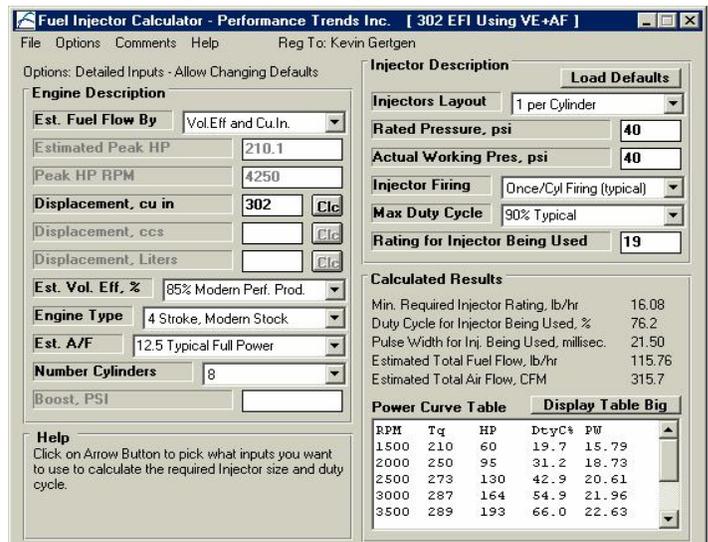
Engine Building Tools, cont

Engine Log Book, Win XP - 10

This program is a "must have" for any professional engine building shop. Not only can you record all your engine information, you can have the program do calculations and checks, like estimating piston to valve clearance, valve spring bind clearance, cranking compression pressure and more. You can supply your customers with professional, organized printouts, and even the actual data files which they can review and print with our free demo version. The program has 7 levels of engine build you can choose from, from a simple Machined Short Block Only, to a Complete Short Block or Complete Head, or all the way to a Complete Engine with Dyno Results.


Typical Input Screen
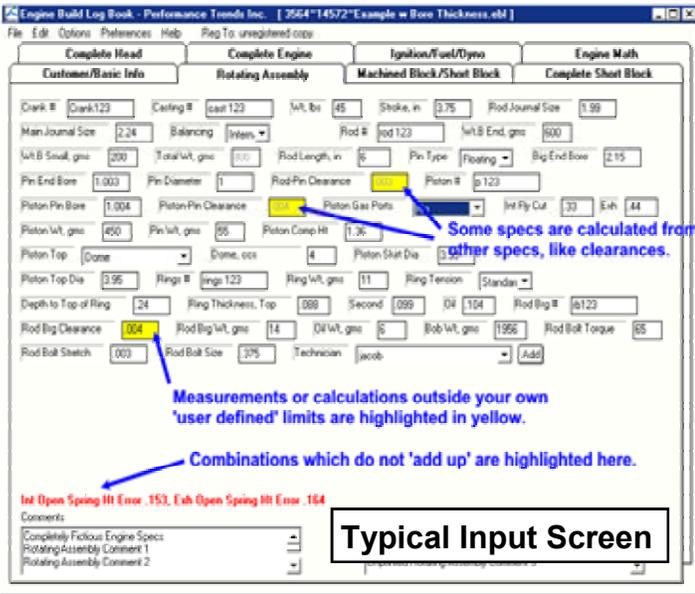
You can customize the program to match how your shop does things. For example, you can tell the program your own preference for checks, like to flag out clearances that are higher or lower than your limits. You can also eliminate inputs you do not use. You can choose to enter multiple inputs for selected inputs, like Cranking Compression or Leakdown, or just one nominal number.

A **Plus Version** is available with many extra features, like including picture files and edit program layout options.

New **Pro Version** for 2021 is available with lots of advanced features, like larger screens, many more inputs and clearance calculations, new report and graph options, and much more.
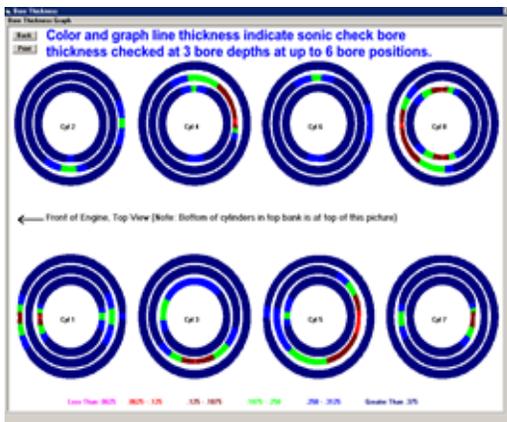

Spring Wiz, Win XP - 10

Spring Wiz will make Valve Spring Calculations which affect Spring Rate, Bind Height, Natural Frequency, Open Force, Stress, and Much More. This program lets you estimate valve spring performance from several different inputs, and lets you combine springs into 2 and 3 pack springs. Optional Plus version lets you include a "rev kit" spring for the lifter only, and other spring details.
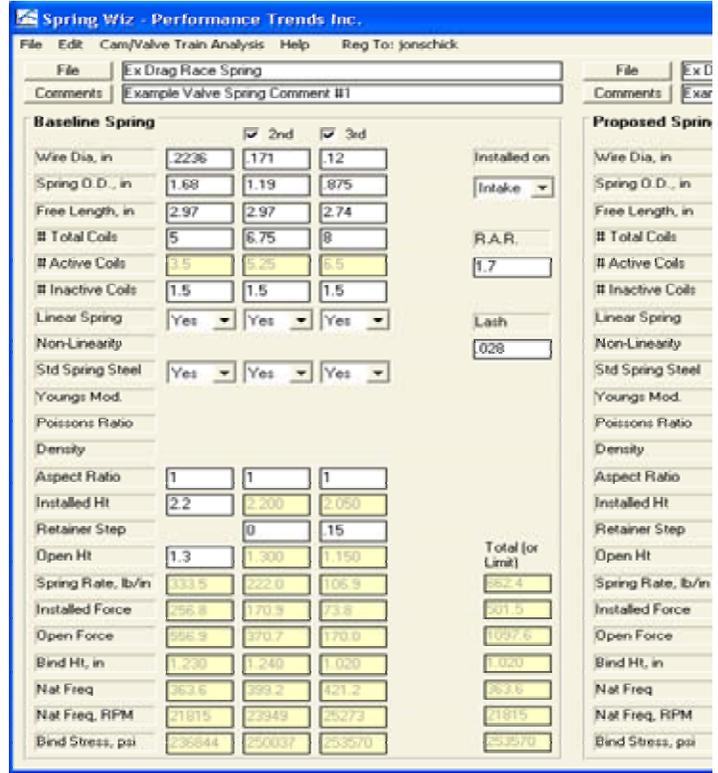
Input valve train details and cam profile details, or import a cam profile file in several different formats, and the program will estimate if a spring pack has sufficient force to control the valve train mass. It will also estimate max spring stress, FFT frequencies and seating velocities which can present problems.
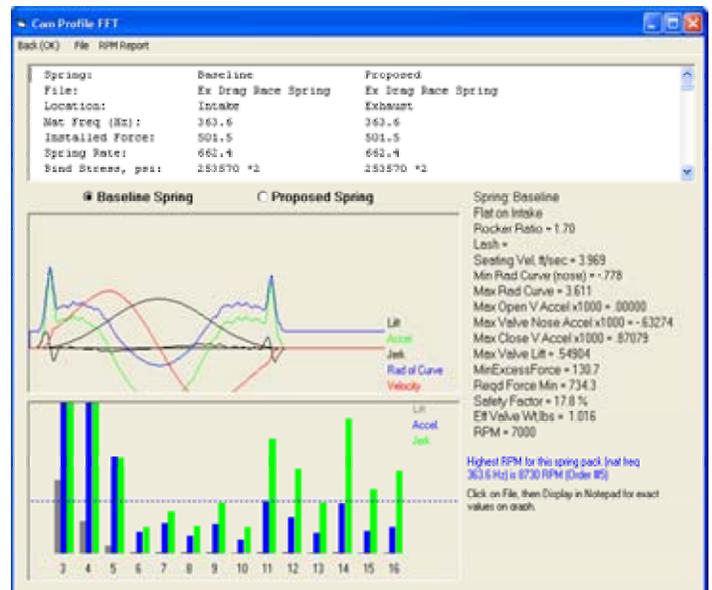
Engine Building Tools, cont

Cam Analyzer v4.3, Win XP - 10

This program is the "poor man's" Cam Doctor. Record and analyze cam lift data from degree wheel and dial indicator measurements, or most any computer cam file. Now do the same analysis as done by the computer cam checkers costing $3000+. Check your cam profiles for lobe area, duration at most any lift, centerlines, acceleration rates, and more. Send data in Cam Dr format (tm) to Engine Analyzer 'Pro' for detailed engine/valve train analysis. Options include:

- Inches or MM lift

Graphs lift, velocity, accel. or jerk.

- Graph or report valve or tappet lift, velocity, acceleration and/or jerk.
- Output ASCII files.
- Reads Cam Dr, Cam Pro Plus, S96, Andrews formats.
- Include company logo on your printouts.
- Advance/retard individual lobes on graph screen for better comparisons.
- Interface to our Cam Test Stand for very accurate, fast measurements.
- Emailing options.
- And much more.
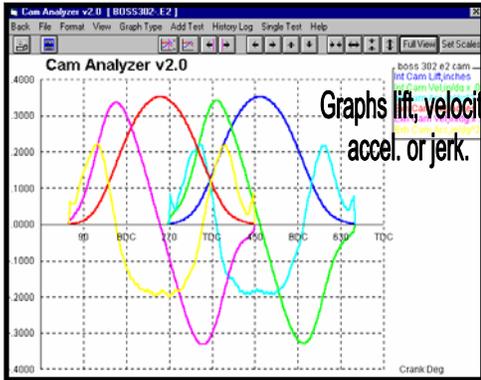
More advanced **Plus** version includes these options:

- Virtual follower. (Measure cam with a particular roller diameter or encoder pointer directly, and simulate most any diameter roller or flat tappet follower, or complex OHC rocker arm geometries.)

Virtual Follower

- Measure base circle runout and lobe asymmetry.
- 5 more advanced analysis reports, including professional looking Cam Card.
- And much more.
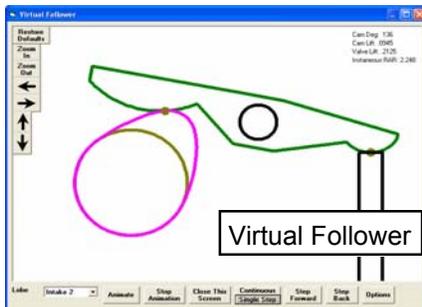
The **Cam Grinder** version adds even more advanced features, including:

- Measure lobes *without* correcting for lifter bore angles (like looking at lobes from end of actual cam).

Cam Card
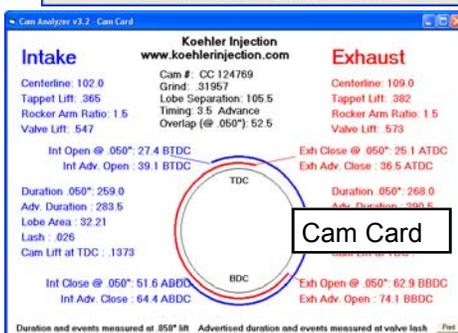
- Measure Absolute Lift of the lobes and journals.
- Graph thrust angle, contact point, and radius of curvature.

Graph of absolute "lift" of lobes and journals as viewed from end of cam.

- Determine actual cam profile (as if measured by a "knife edge"), needed for CNC format data.
- FFT (Fast Fourier Transform) analysis of the Lift, Acceleration and Jerk measurements, to identify frequencies which may cause valve spring surge.
- Export cam data in a CNC format for cam grinding
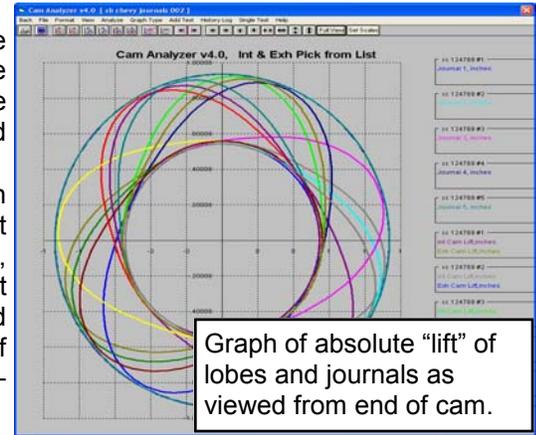
Cam Test Stand

Now you can very precisely measure all lobes on your cam using our Black Box electronics and Cam Test Stand.

Measure all 16 V-8 lobes in less than **5 minutes**, then get a summary report to see if all lobes are in spec. Complete system, retro-fit kits for Cam Dr (tm) and other kits and options available starting at $799

Main Input Screen

Cam Lobe Layout

Cam Test Stand (motor option shown here)

Find Dowel Pin Location for TDC Timing
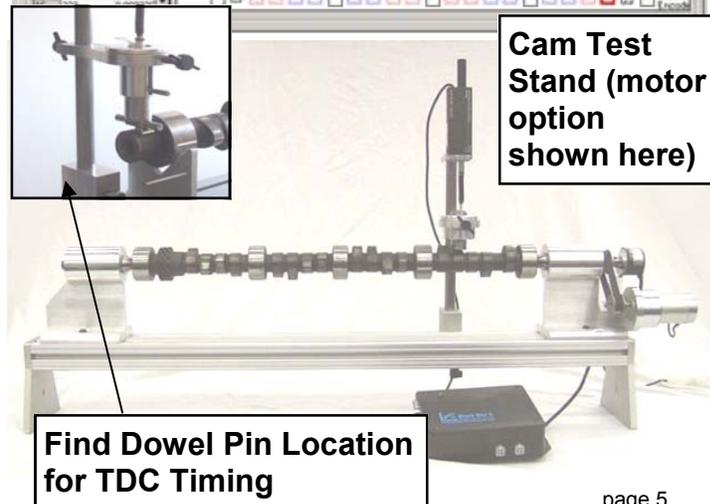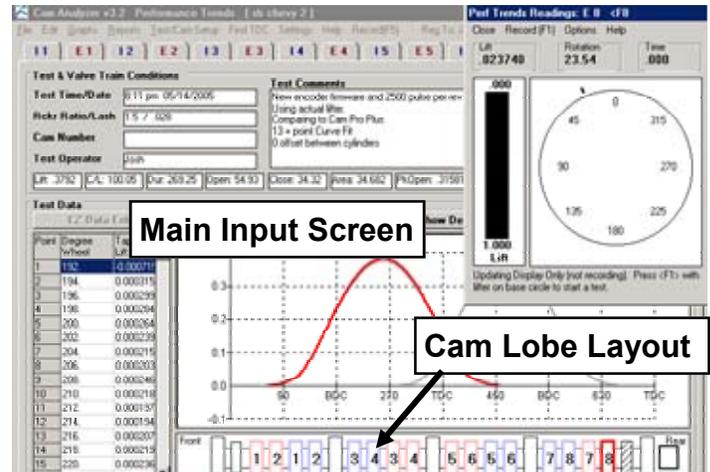
Engine Building Tools, cont

Weather Wiz, Win XP - 10

Our new Weather Wiz lets you compare 2 weather conditions, specified most any way you want: altimeter, corr. or obs. barometer, wet/dry bulb, grains, dew point, relative humidity, etc. Predicts A/F, HP, jet changes. Optional Weather Station.
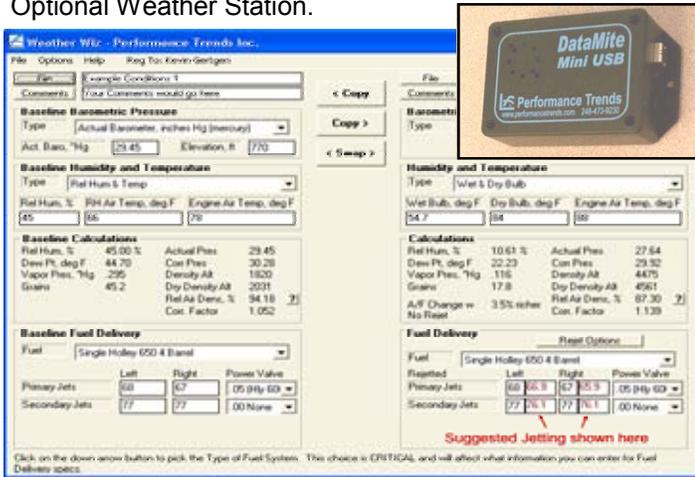
Valve Spring Tester v1.1C, Win XP - 10

Our Valve Spring testers use electronics to measure spring force and height to accurately measure spring rate, spring force at seated and open heights, coil bind and much more. Test springs up to 4" tall and 2500 lbs. Purchase it as either a Manual or Automatic (pneumatic) tester, or as a very affordable retro-fit kit for DIY (do-it-yourself) and Power Technolory (tm) spring testers.

USB Manual Tester

USB Automatic Tester
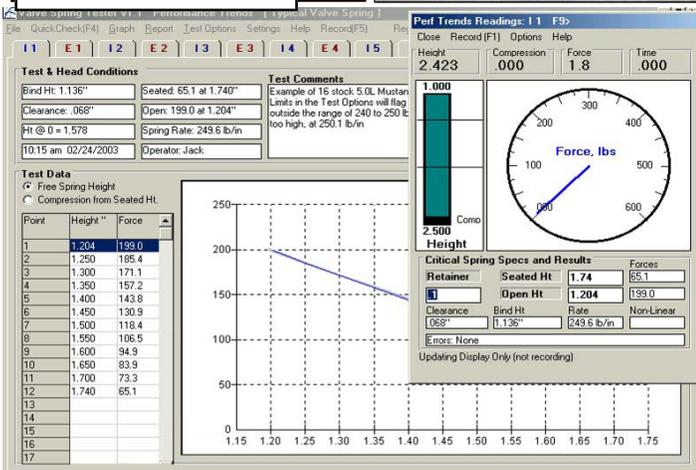
General Vehicle Tools

Shock Dyno, v1.1C, Win XP - 10

Our Shock Dyno has many features at a very affordable price, including:
- 110 VAC (and optional 220 VAC) 2.0 HP motor
- Velocities up to 14 inches/sec
- Strokes up to 2.5"
- Force up to 2000 lbs
- Overforce safety shutdown
- USB interface to XP, Vista, Win 7, 8 or 10.

Plus version of software includes:
- Up to 10 tests in 1 file.
- More advanced graphing.
- Infra-red temperature sensor.
- Warmup cycling until a particular temperature is reached.
- Shock w Spring test for motorcycle forks or coil-overs.
- Reads Roehrig ™ files
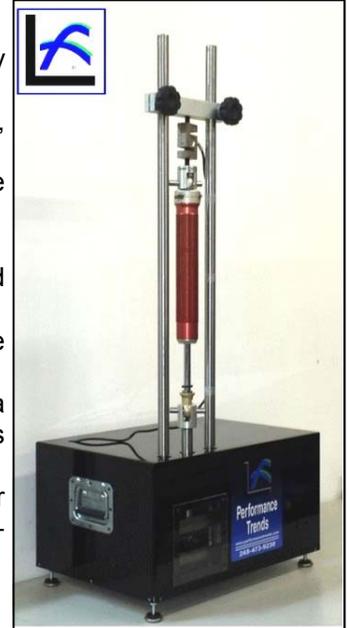
Rotating Inertia Calc., Win XP - 10

Every racer knows a lighter car is a faster car, but many do not know that removing weight from rotating components gives a much bigger benefit. Let our Rotating Inertia Calculator show you how this works by itemizing components of interest, and taking gear ratios and tire size into effect. It will show you the *effective* weight of the components, and the benefit of reducing weight from each one.


Main Input Screen

Effective Weights Screen
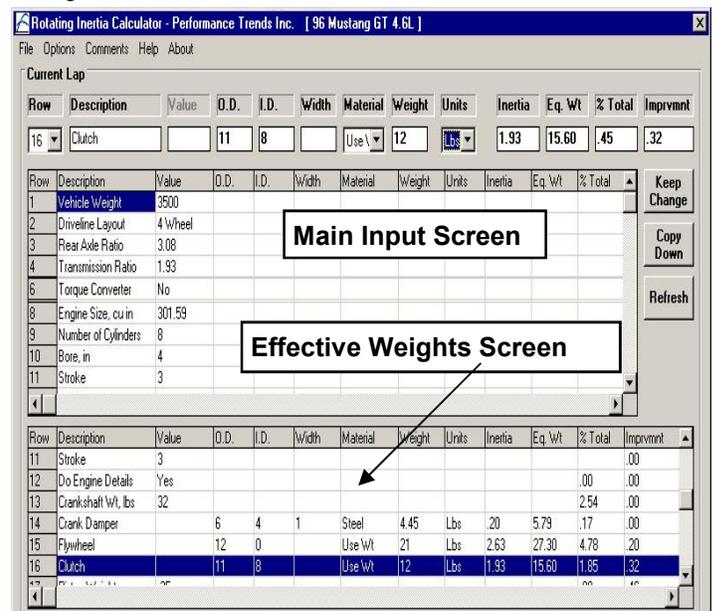
DataMite Data Loggers

Drag Race DataMite v4.2   Win XP - 10

Shown below is our new, easy, powerful and affordable 35 channel data logger, the DataMite 4 USB. This system can record 4 RPMs (engine, front & rear wheel, or driveshaft), a 3 axis accelerometer, weather conditions, 10 thermocouples (like EGTs, oil temp, etc), and 14 analog channels for pressures, positions like shock or throttle, A/F, 4 digital (on/off) channels, and more. After your run, remove the SD memory card and plug it into your PC for near instant downloads. Analyze your data for tire or clutch/converter slip, MPH, distance, accel Gs, gear ratio, gear #, lap times, even "dyno quality" torque/HP curves. Built in features for drag racing makes analysis easy.

New DataMite 4 USB
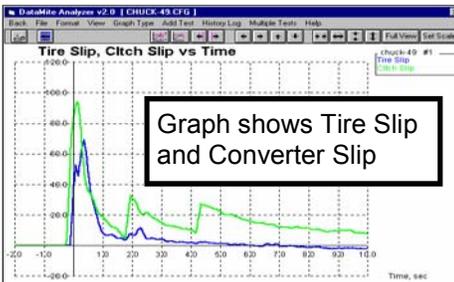
Graph shows Tire Slip and Converter Slip
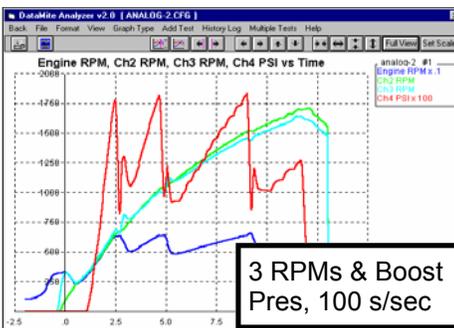

3 RPMs & Boost Pres, 100 s/sec

Other features include automatic time alignment of runs, full log book to record your other settings, overlay graphs (up to 6 runs), zoom / time shifting/cursor line on the graphs for detailed analysis, segment time input and correction of results to standard weather conditions, linking to our 4 Link Calculator for analysis of shock travel data, and much more. Some features are only available in the Pro version of software.

Sportsman + Pkg gives 8 EGTS, and more for $1399. Call for details or visit our website to download a demo.

Dyno DataMite v4.2   Win XP - 10

Our DataMite electronics and Dyno software have been installed on over 1400 engine dynos, either inertia dynos or absorber dynos, like Superflow ™, Stuska ™ or GoPower ™. They have also been installed on several chassis dynos like DynoJet ™, Mustang ™, Clayton ™.

5 Tests on Yamaha 2 Stroke Engine, 5 Different Exhaust Flex Lengths.
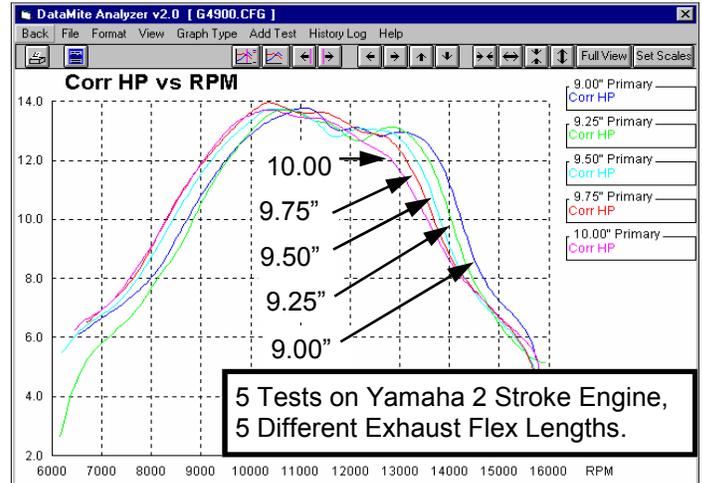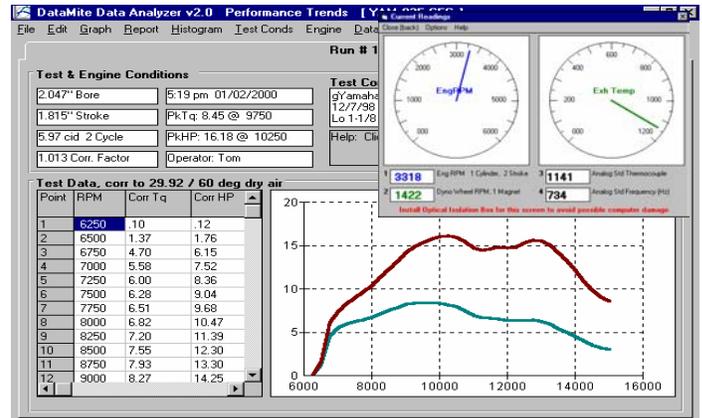
Now you can do easy and powerful computerized data acqui-sition on your dyno starting for **under $500.**

Our most advanced **Enterprise Edition** lets you read OBD2 data, more advanced gauge display, correct for vehicle coast down losses, and more. Visit our website for full details, info on building your own inertia or brake dyno, and **water brake or eddy current controllers.**

One of 8 Log Book Screens

Real Time Display for 35 Channel DataMite 4 with Enterprise Software

DataMite, cont

Sensors

Here's pictures of some of our newer sensors and accessories, like our Remote A/F Sampler to the right, perfect for Chassis Dynos.

Remote Dual Exhaust A/F Analyzer

Circle Track/Road Racing DataMite

Like the Drag Racing DataMite, but the software is set up for working with laps instead of individual runs. The software can automatically find and time individual laps and segments from GPS sensor. Track mapping, friction circle, lap segment analysis are all included. Send the shock sensor and other data to our Suspension Analyzer for even more detailed analysis. This is a truly powerful suspension analysis system.
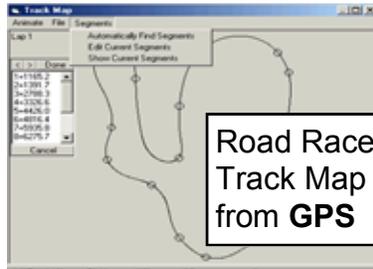

Road Race Track Map from **GPS**

Shock Sensor & Mounting Kit

3 sensor IR Tire Temp Sensor uses only 1 logger channel

GPS Sensor

RPM Sensor for Reflective Tape

A/F Gauge (no computer needed)

You can measure true A/F with an accurate 5 wire sensor without a computer using our A/F Gauge. You can also record the output from the gauge with our Free software, or record it with our DataMite Data Loggers.


Comparing 3 Different Laps
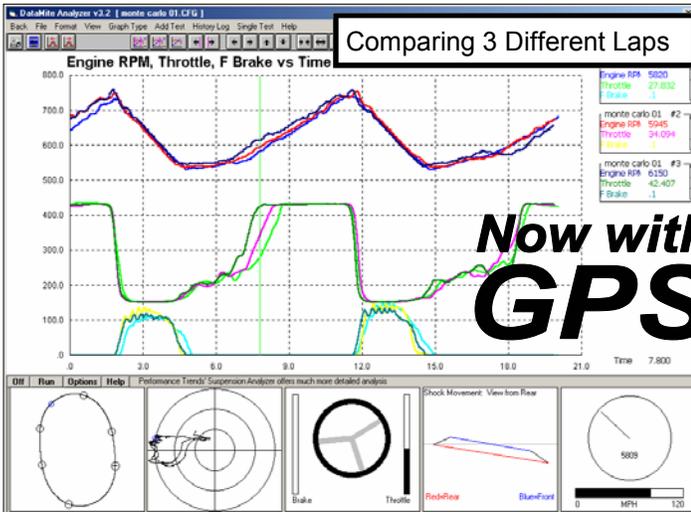
Now with **GPS**

Free Software

Segment	Best	Lap 1	Dif.	Lap 2	Dif.	Lap 3	Dif.	Lap 4	Dif.	Lap 5	Dif.
1	8.279	8.350	.071	8.279	.000	8.534	.255	8.452	.173	8.415	.136
2	1.541	1.550	.009	1.568	.027	1.604	.063	1.542	.001	1.541	.000
3	9.850	9.850	.000	10.019	.169	9.952	.102	9.859	.009	9.871	.021
4	4.933	5.100	.167	5.014	.081	5.048	.115	4.933	.000	5.155	.222
5	11.850	11.850	.000	12.286	.436	11.876	.026	12.488	.638	12.013	.163
6	3.480	3.650	.170	3.519	.039	3.480	.000	3.541	.061	3.540	.060
7	10.664	11.000	.336	10.784	.120	10.812	.148	10.664	.000	10.813	.149
8	2.955	3.200	.245	3.063	.108	3.033	.078	2.955	.000	3.055	.100
9	4.150	4.300	.150	4.183	.033	4.272	.122	4.150	.000	4.227	.077
10	5.287	5.400	.113	5.287	.000	5.452	.165	5.459	.172	5.344	.057
11	2.538	2.650	.112	2.538	.000	2.633	.095	2.581	.043	2.587	.049
12	8.859	8.990	.131	9.190	.331	8.973	.114	9.056	.197	8.859	.000
Lap	74.386	75.890	1.504	75.730	1.344	75.670	1.284	75.680	1.294	75.420	1.034

Road Race & Circle Track DataMite v3.2   Performance Trends   [Formula Vee New Hampshire.CFG]

Type: Road Race Laps   12:40 pm 08/14/2003   Time: 77.61   Event: New Hampshire
Trk Len: 8500   Dnsty Altitude: 1614   MPH: 74.67   Run #: 14
Run #: Summary of 5   Air Temp: 76   Position: 1   Desc: Practice

Segment Analysis Report Comparing Segment Times from 5 Different Laps

Drag Racing Tools

4 Link v2.0 (Std/Plus), Win XP- 10

This program maps your instant center locations for all possible settings of your 4 link. In addition, it calculates "% Anti-Squat" (indication of how hard you 'hit the tires'), pinion & driveshaft angle, instant center and how they change as the suspension moves. Download free demo from our website.

Plus version adds several enhanced features, like allowing up to 15 holes on each bracket, generating holes on a line or arc, animation, and more.

Drag Race Analyzr, v3.4 B Win XP -10

New v3.4B lets you simulate full power acceleration to 1/8, 1/4, or up to 5 miles (Bonneville). Try "what if" with engine power, weather, headwind, gear ratios, driving style, etc. and see the effect on ET, MPH, tire spin, more. Automatically find best converter, axle ratio or shift RPMs. Predict your dial in or throttle stop from past runs. Now allows up to 10 trans gears and converter lockup.

Rated "most accurate" by Car & Driver. Other features include 'Match Vehicle Performance" to adjust specs to match your cars actual runs, many example parts preloaded, import power curves from Windows Engine Analyzer, keeps history of last 25 runs, shows density and dry density altitude, input altimeter, corr or obs baro-meter, wet/dry bulb etc. Include a picture of your car in the data file for printing or sharing on the web. Download FREE demo from our Website.

Use Full Engine Power Curve
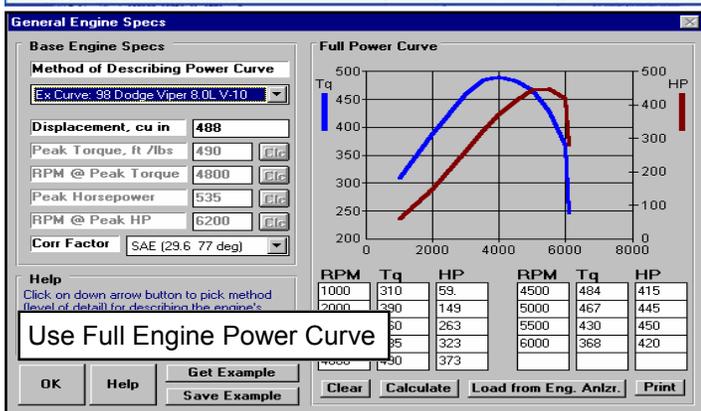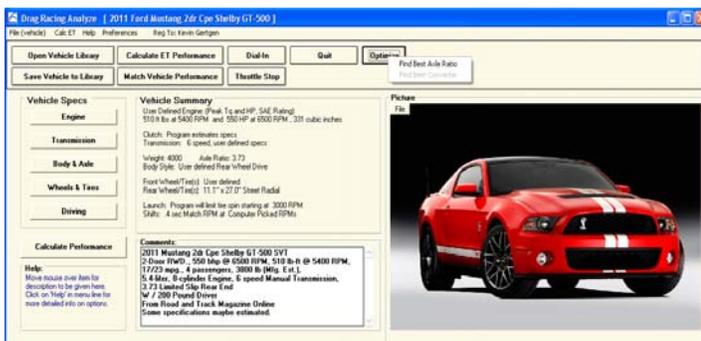
Throttle Stop Prediction

Practice Tree (Std/Plus) Win XP - 10

This program *will* help you understand all aspects of staging, delay box, vehicle and rollout delay time, and your human reaction time. Watch rollout time change as you stage deep or short. Track your results to spot trends.   Fine tune your skills to cut a better light, play against yourself, a computer driver or a friend and have some fun. **New Plus Version** has a Shift Light to measure shift reaction time, and more new features. Download FREE demo from the website.

Shift Light for new Plus version

Drag Racing Tools, cont

Drag Race Analyzer Pro Win XP - 10
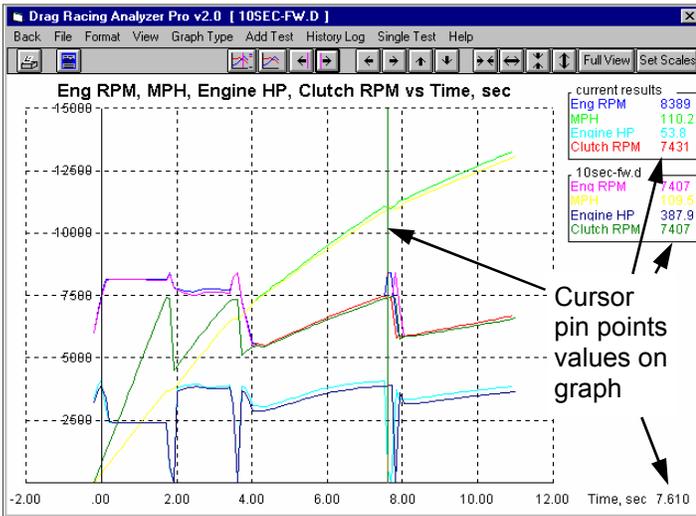
Pro has the features of Drag Racing Analyzer *plus* simulates centrifugal ('slider') clutches, throttle stops and/or nitrous oxide stages during the run, hood scoop effects, more graph options, more tunable converter specs, get results at selectable points in run, chain calculations to check several mods at once. "Team Engr" version lets you import data logger data for comparison and includes a complete slider clutch analysis program.

Cursor pin points values on graph

Screen to Analyze Centrifugal Clutch arms and adjustments.

Circle Track Tools

Roll Center Calc. Win XP - 10

Want just a simple front suspension analysis program, then the Roll Center Calculator is for you. Enter your car's suspension measurements and see where the Roll Center is. Then send the car through Dive & Roll and see the Roll Center move and camber change. Works for McPherson Strut/double A-arm suspension/straight axle, shim adjustment, camber gain, tables and graphs of


V4.0 w Force Based Roll Centers

camber vs dive & roll, etc. New **Plus Version** includes rear suspension inputs, front/rear balance, and more

## Suspension Analyzer, Win XP - 10

Like Roll Center Calculator Suspension Analyzer does front suspension, analysis. However, being 3-D allows for more details, including bump steer, Ackerman, caster gain, anti-dive, tire scrub, camber gain, more. Features include user-definable graphs and reports, automatically finding the best locations for mounting points, shim

V2,4C w Force Based Roll Centers

adjustment, more. **"FV" (full vehicle) version** includes several rear suspension types, doing vehicle roll couple (handling rating), push/pull rod springs, more. etc. It can automatically find best points for minimum bump steer, roll center position, tighten or loosen the handling by a certain %, and much more.

FV version w Data Logger Options allows importing data logger data, importing measurement files, ball joint wizard, and more.

Circle Track Tools, cont

Circle Track Anlzr v4.0 Win XP - 10

Like Drag Racing Analyzer, but for circle track. Simulate most any vehicle on most any asphalt oval track you can design. Automatically find springs, roll bar, or roll center heights to produce a "balanced" car. Change power curve, gear ratio, aerodynamics, bank angle, etc and see the effect on lap time. Then, see how suspension inputs like spring rates, roll bar rate, corner wts, front suspension geometry, etc effect, dynamic wt transfer, spring deflection. Also recommends springs, stagger, more. Roll Center Calculator built in, rear suspension inputs and layout screen, watch dive & roll as car goes around the track, different types of graphs, and more. Download FREE demo from website.

New Plus version for 2020 with more advanced features.

V4.0 w Force Based Roll Centers

Cursor lets you pin-point values on the graph.

Graphing Engine RPM for 2 Different Runs.

This Corner Weights screen simulates jacking screws, tire size changes or adding/ removing/moving weight (ballast) to see the effect on ride height and/or corner weights.

Lap Timer   Win XP - 10

The Lap Timer turns your computer into a super precise and power full stop watch. Not only will it record lap and/ or segment times, but you can include data like race position, caution flags; edit the results after the race if you made a mistake; save results with comments; recall results for comparison, printing or analysis in the future. New features let you link up with the Circle Track Log Book below for doing analysis of lap times.

Log Book v1.1, Win XP - 10

Our Circle Track Log Book will let you record all those setup numbers (caster, camber, tire pressures, tire temperatures, etc) for storing and retrieval at a later date. Powerful search features will let you find your past records and flag out entries which have changed from your 'Baseline' record. It also works with our Circle Track Analyzer so you can log detailed suspension geometry, roll center, roll couple, etc. Use the 'Edit' feature to customize the name of certain inputs to work better with your car or your type of racing. New Features let you link up with Lap Segment timer above for lap time analysis.

Miscellaneous Tools

Fuel Economy Calc.   Win XP - 10

Fuel Economy Calculator is probably the most detailed program for predicting the effects of modifications on fuel efficiency. It calculates cruising MPG for most any MPH or RPM (user selectable) for most any transmission gear. It has numerous built-in examples of transmissions, vehicle aerodynamics, typical engine types (or import curves from our Engine Analyzers), and complete vehicles to make building vehicle files easy. It builds tables of MPG over a range of either RPM or MPH for each transmission gear, show detailed analysis of a single gear, and much more.
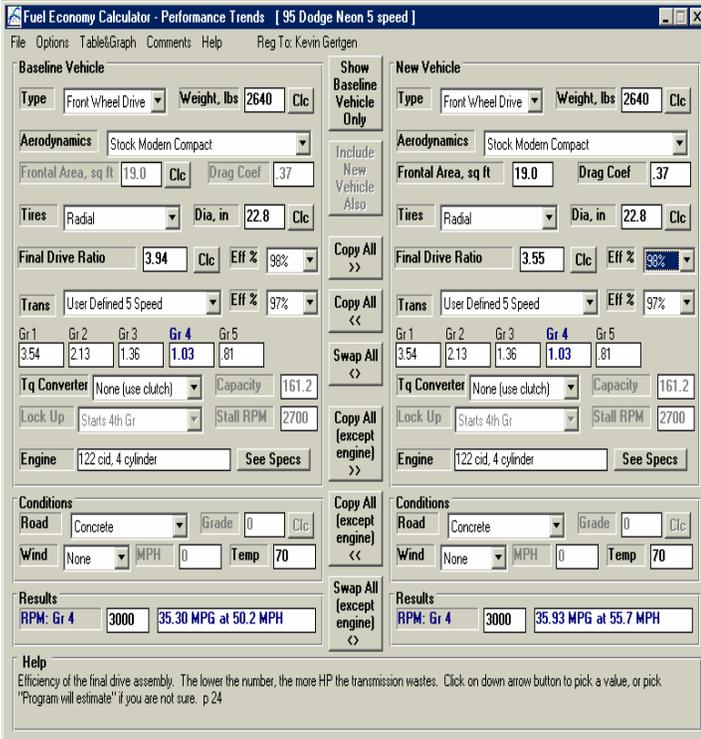
Trans Gear Calculator Win XP - 10

Determine RPM change for new tire sizes, axle ratios, trans ratios, etc.   Many features include graphing, optimum shift RPMs for engine power curve, trans gear library, KPH or MPH, tables & graphs of RPM vs MPH or MPH vs RPM, calculate tire sizes from P-metric sizes, & more.   New "Plus" version includes more advanced analysis which has been requested by road racers.

Tractive Force vs MPH Graph is one of several new features in Plus Version, which also has more graph features and allows importing of Engine Analyzer power curves.
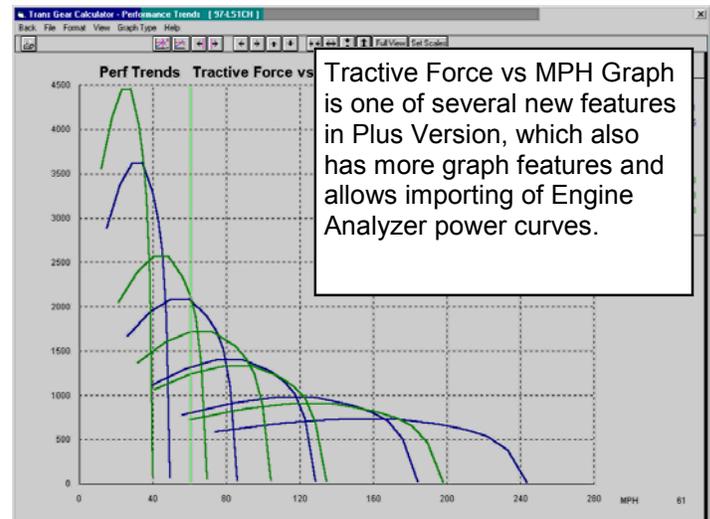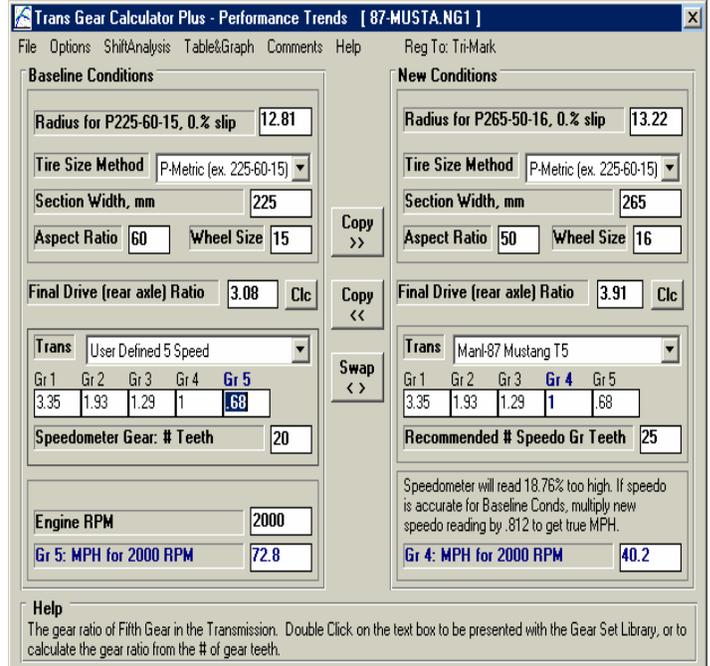
Other Products

Ask about our DOS Dyno Data Analyzer for SuperFlow 801/901 (tm) dyno owners. We've also got our DOS Performance Analyzer, rated "Best" by Car & Driver magazine in its day. **It is our only program to do hill climbing performance. Watch our website for new products, many with features not found anywhere else.**

Download **FREE** demos of most of the products you see in this catalog. Call 248-473-9230 to purchase products direct, or ask for your favorite or nearest retailer. Most demo programs can be activated right over the phone or via Email.

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