

2004 What's New

From Performance Trends



Been a Long Time!

It's been about 4 years since our last mass mailing, and a lot has changed. We've got many new products, and most all programs have had major updates. We're now using monthly **email newsletters** to keep customers informed. Our website, **www.performancetrends.com**, has brochures and downloadable demos of most all products, user's manuals in PDF format, readme.txt files describing the most recent changes, past email newsletters (click on "What's New"), and much more. To stay informed, send us your email address in an email requesting our newsletter. Also see the back page of this flyer to purchase a **Demo CD** of all products for \$5.

Also, you can visit our booths 829-831 at the Performance Racing Industry (PRI) trade show in Indianapolis, Dec 9-11. Call 949-499-5413 to make your reservations.

Product Line Summary

Engine Building Tools

Cam Analyzer v3.2 *	\$ 119.95
Compression Ratio Calculator v2.0 *	29.95
Dyno Data Analyzer v1.1 DOS	199.00
Engine Analyzer v3.2 *	109.95
Engine Analyzer v3.2 Plus *	199.00
Engine Analyzer 'Pro' v3.3 *	469.00
Fuel Injector Calculator v1.1	39.95
Port Flow Analyzer v3.0 E Basic *	249.00
Port Flow Analyzer v3.0 E Pro *	449.00
Swirl Meter with direction, average/max/min	749.00
Swirl Meter above + computer analog output	899.00
Valve Spring Testers & Kits (starting at)	499.00

Drag Racing Tools

4 Link Calculator v2.0 *	79.95
Drag Racing Analyzer v3.2 *	79.95
Drag Racing Analyzer 'Pro' v2.0 *	229.00
Drag Racing Analyzer 'Pro' v2.0 -Team Engr. *	329.00
Practice Tree v2.0 Windows *	39.95

Circle Track/Road Race Tools

Circle Track Analyzer v3.2 *	149.95
Lap Timer v1.1	69.95
Lap Mileage/Pit Stop Predictor	99.95
Roll Center Calculator v2.0 *	79.95
Suspension Analyzer v1.1 Basic	249.00
Suspension Analyzer v1.1 Full Vehicle	399.00
Suspension Spring Tester & Kits (starting at)	799.00
Transmission Gear Calculator v2.0 *	49.95
Transmission Gear Calculator v2.0 Plus *	99.95

Other Programs

Fuel Economy Calculator v1.1	79.95
Rotating Inertia Calculator v1.1	39.95
Performance Analyzer v1.1 DOS	119.95

Data Loggers

Black Box Data Logger for Spring Tester, Weather Station, Cam Tester, Flow Bench Testing, EZ Flow System (starting at)	350.00
DataMite 4 channel system (starting at) *	559.00
DataMite II 30 channel system (starting at) *	1199.00
EZ Flow Flow Bench Kit (starting at)	899.00
Wide Band UEGO A/F Sensor System	399.00

*Indicates an update is available, some FREE.

Updates

have been released for most all our programs, as shown in the Product Line Summary at the lower left. These updates include 32 bit programming for more compatibility with new operating systems (Windows XP, NT, 2000) and printers. Updates also include many new features and new example parts and files. For many of our smaller programs (under \$70 but also including the 4 Link Calculator), the updates are free by just downloading the latest demo from the website. Type your name the same as the first time and the same unlock code will unlock it. For other programs, the updates will cost from \$20 to \$65. All our Windows programs now come on CDs, and no longer run on Windows 3.1.

Upgrades

are also possible, giving you discounts if you move up to more advanced programs. Some of these upgrade discounts include:

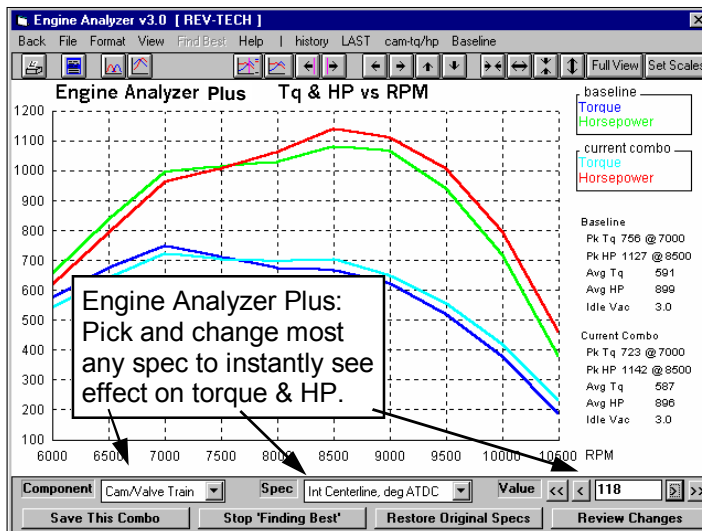
Upgrade from:	To:	For	Save
Engine Analyzer	Eng. AnlZR Plus	\$99	\$90
Engine Analyzer	Eng. AnlZR. Pro	394	\$75
Engine AnlZR. Plus	Eng. AnlZR. Pro	329	140
Roll Center Calc.	Circle Track An.	115	35
Roll Center Calc.	Susp. AnZR.	184	65
Circle Track AnZR.	Susp. AnZR.	184	65
4 Link Calc.	Susp. AnZR. FV	\$334	65
Drag Racing AnZR.	DrgRacAnZR Pro	\$184	45

Call Performance Trends at 248-473-9230 for details.

Major changes

Engine Analyzer

There is now a middle range Engine Analyzer, the Plus. It adds 10 major features to the standard version. All versions (std, Plus and Pro) now have many new example parts and complete engine files, new graphing features, time saving features, filing features, several new ease-of-use features, and Auto-Linking to most vehicle programs. Auto-Linking runs a vehicle program with each new Engine Analyzer power curve and displays the vehicle results for the



new power curve, either ET and MPH or Lap Times. New, powerful optimize features to automatically find the best cam specs, port volumes, etc are in the new standard and Plus versions (2 methods in Plus).

Engine Building Tools Our popular **Compression Ratio Calculator** program does many engine building calculations in addition to detailed compression ratio.

Compression Ratio - Performance Trends Inc. [FORD302]

File Options Comments Boring/Stroking Help About

Base Engine Inputs		Calculated Results		
Bore, in	4	Cu. In.	CCs	Liters
Stroke, in	3	Cylinder Size	37.7	617.9
# of Cylinders	8	Engine Size	301.59	4943.1
Rod Length, in	5.09	Chamber Size	4.67	76.6
Int Valve Closing, deg	72	Compression Ratio	9.07	0.077
Deck Height, in	8.206	Dyn. Comp. Ratio	7.45	
		Cranking Pres. PSI	185	
		Bore/Stroke Ratio	1.333	
		Rod/Stroke Ratio	1.697	
		Adjust specs to get a desired Comp. Ratio		

Chamber/Piston Inputs		Volume Contributions			
Chamber CCs in Head	63	Head	3.844	63	82.2
Piston Design	Dish Top	Gasket	0.462	7.57	9.9
Piston Dish, ccs	3	Deck	0.138	2.27	3
Gasket Thickness, in	.035	Piston Dish	0.183	3	3.9
Gasket Bore Dia, in	4.1	Piston O.D.	0.047	0.77	1
Deck Ht Clearance, in	0.011	Help: Cylinder bore measured in inches			
Piston Ring Depth, in	.25				
Piston Top O.D., in	3.97				
Compression Ht, in	1.605				

The "Engine Builder's Buddy"

Fuel Injector Calculator lets you estimate electronic fuel injector requirements from various engine details.

Our **Port Flow Analyzer** is probably the most popular flow bench software available, being used by most all Nextel Cup teams, drag race engine builders, and manufacturers like Lotus, Harley Davidson, Mercury Marine, Chrysler, and many more. Port Flow Analyzer links to SuperFlow's™ FlowCom or our Black Box to computerize your flow bench testing for major gains in accuracy and time savings. It also reads our Swirl Meter/Tumble Fixture, does port velocity maps, analysis with

Port Flow Analyzer v3.0 Performance Trends [PORTVEL...]

File Graph Report Test Options Head Flow Bench Engine Help

Test & Head Conditions

Int #1 Exh #1 Int #2 Exh #2

Test Comments

Test Data

Point	Lift	L/D	Range	Test Pres	Flow Pres %	Test Temp	Flow Temp	CFM
1	.000	.000	1	10	25	90	125	.0
2	.050	.027	3	10	75	85	135	18.5
3	.100	.054	5	10	68	80	130	36.2
4	.200	.109	7	10	73.30	78	122	72.0
5	.300	.163	8	10	75	78	120	99.3
6	.400	.217	8	10	80	78	115	106.5
7	.500	.272	8	10	80	78	115	106.5
8	.600	.326						

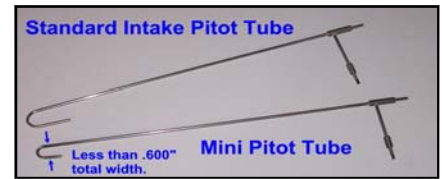
Port Flow Analyzer

cam profiles, averaging, correcting to most any test pressure, comparison plots and reports, and more. Port Flow Analyzer can also be linked with a special version of our Black Box to build our **EZ Flow flow bench**. Our kit comes with complete plans, some critical machined pieces like a SB Chevy/SB Ford bore adapter, electronics and software for \$899. It gives nearly identical results as SuperFlow benches and runs much faster. You can flow a port at 7 lifts in about 2 minutes, with results that repeat within 1 CFM.



Other flow bench tools are available like intake and exhaust Pitot

Tubes, including our Mini Intake. This is the smallest tube we've seen, letting you test small, short ports like Harleys and Briggs.



The **Valve Spring Tester** is a new product line. The simplest version is just Windows computer software to analyze Power Tech™ spring tester files for \$249. We have an electronic interface for the Power Tech™ tester and software for \$549, and electronics and sensors for a Rimac™ spring tester starting at \$499. Order our complete Valve Spring Tester with electronic load cell, 3" spring height sensor, and Plus version of software for graphs, reports, averaging, and more for \$1599.



Drag Racing Tools have all been updated to 32 bit versions. The **Practice Tree** now has a more realistic screen and options to trigger of external hand or foot switches. All **Drag Racing Analyzers** will Auto-Link to all the latest versions of Engine Analyzer for automatic determinations of ET and MPH from engine modifications. The **Drag Race Analyzer Pro** can interface to the Black Box weather station for highly accurate, real time Dial In and Throttle Stop predictions.

New Practice Tree Features

Performance Trends Inc (C) 1993

Driver: 9.900

Target R/T: 500

Total Veh Delay: 245

Driver Delay: 600

Required Driver R/T: 260

Driver Start Light: 304

Actual Driver R/T: 304

Win by: 871

Reaction Time: 544

Avg R/T: 850 (10 runs)

50.0 % Win

50.0 % Red Lights

Click on Analyzer Drivers for more on history details

Restart Run History

Shift In: 9.900

Target R/T: 500

Total Veh Delay: 245

Driver Delay: 600

Required Driver R/T: 260

Driver Start Light: 304

Actual Driver R/T: 304

Loss by: 871

Reaction Time: 615

Avg R/T: 823 (10 runs)

50.0 % Win

20.0 % Red Lights

Click on Analyzer Drivers for more on history details

Restart Run History

Rollout Time, sec

Enter Here Calc. from Rolling Through Lights

.33 Estimate from Lifting Out of Lights

Staging Depth, in: 4.50 233 sec

60 Ft Time: 1.6 12.95

Frt Tire Dia: 28

Stagger, in: 0.0 none

Hand Switch

Foot Switch

Com Port Connector (for user's switches)

The **Team Engineer** version has a very detailed centrifugal clutch library and simulation, and also lets you overlay your data logger data with simulation data.

Circle Track/Road Race Tools have also all been updated to 32 bit versions. New programs include our fully 3 dimensional, **Suspension Analyzer**. It's available in \$249 **Standard** (front end only) and \$399 **Full Vehicle** versions (front and rear suspensions, rocker arm springs, and more). Suspension Analyzer is also used by Nextel Cup teams. Other features let you link up with our DataMite data logger (or other data loggers at an additional cost) to see exactly what your suspension is doing at most any place on the track.

Suspension Analyzer v1.1 Performance Trends [4 Link + Panhard Kit]

File Edit Graphs Reports Vehicle Specs Setup Options Zoom Average Preferences Help

Front View Side View Top View No View Dynamic Squat Roll LS

This is a view from the rear of car (right side of screen is actually right side of car)

Rear Suspension Analysis

Toe In Gain: 0.0° Roll Center Ht: 7.50 Turn Radius: 7459 R/L Turn Time In: 0.07 Roll Center Left: 56 Toe In Gain: 0.0° Anti/Squat: Steer 188.0% Eye 181.0% Anti/Squat: Steer 156.0% Eye 143.7%

Circle Track Analyzer includes some new features including the Auto-Linking (see Drag Racing Tools above) and virtual scales to let you adjust springs and cross weight change.

We've also added a couple of new programs, **Lap/Segment Timer** (a detailed, computerized stop watch) and **Lap Mileage Pit Stop Predictor** (for Busch and Nextel Cup teams who need to keep detailed records on fuel usage and predict how many laps are in the tank.

Our **Trans Gear Calculator** is used by road racers, transmission shops, and chassis builders. It lets you calculate MPH from RPM or RPM from MPH in most any form you can imagine. The Plus version adds even more features.

Our **Suspension (Coil) Spring Tester** (like Valve Spring Tester) is available a kit for \$799 to computerize a spring tester you already have, or as a complete stand for \$1299.



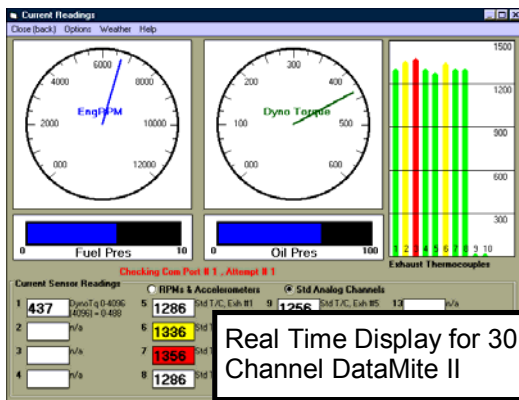
Coil Spring Tester

Other Programs Removing weight from a rotating component gives a bigger benefit than the same weight from non-rotating component. The **Rotating Inertia Calculator** lets you check just how large this effect is for various size components with different gear ratios, tire size, etc.

Fuel Economy Calculator is the most detailed program to predict the effect vehicle and engine modifications have on vehicle fuel economy. This program also Auto-Links to our Engine Analyzers to instantly check engine mods for MPG.

Data Loggers are available as either our Black Box or our DataMites. The Black Box applications have been discussed in the previous sections concerning EZ Flow flow bench, spring testers, etc. The DataMites will be discussed here. DataMites come in either a 4 channel or 30 channel version. The 30 channel DataMite II can be configured different ways, with 16 channels available as unused, analog inputs (like pressure, position, RTD temps, A/F, torque, etc), or thermocouple inputs (temperatures). Different software turns the DataMites into different types of data loggers.

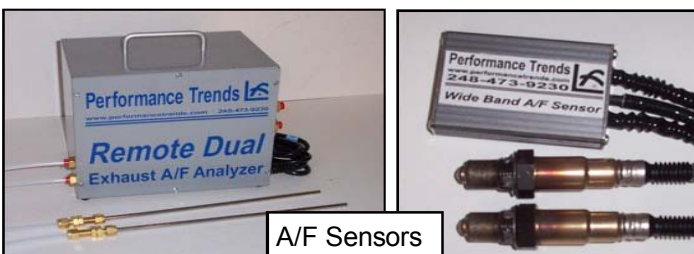
Dyno DataMite lets you computerize your inertia or brake dyno, either engine or chassis dyno. We've sold over 300 systems worldwide, for home made (custom)



Real Time Display for 30 Channel DataMite II

dynos, or to instrument Stuska™, Go-Power™, Depac™, Land & Sea™, Clayton™, DynoJet™ and other lesser known brands. Call us for a quote on your dyno. It's the most productive, time saving investment you ever make.

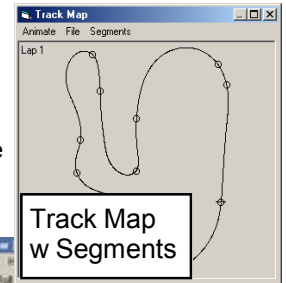
Drag Race DataMite lets you add sensors to your drag race vehicle to record things like A/F, fuel pressure, converter/



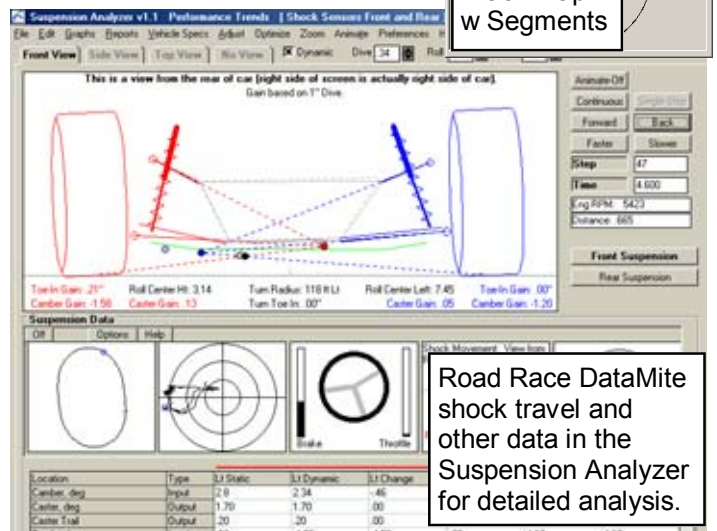
A/F Sensors

clutch/tire slip, EGTs, distance, MPH, transmission and engine temperatures, segment times, and much more. The Pro version of the software also includes a full log book with carb jet recommendations, and commands to send shock sensor data to our 4 Link Calculator or Suspension Analyzer to visualize what the bump steer, roll steer, pinion angle, anti-squat, instant center, and much more are doing during launch and down the track. There are definitely more expensive data loggers, but none more powerful for this type of detailed analysis. The program is also user friendly with automatic zeroing out of start time for easy overlay graphs and reports, segment analysis reports, dual cursors for analysis, time shifting on the graphs, histogram graphs, more.

Road Race/Circle Track DataMite lets you add sensors to your race vehicle to record things like throttle and brake, shock travel and velocity, lateral and longitudinal Gs, engine readings like the Drag Race version, gear # and gear ratio, converter/clutch/tire slippage, and more. Detailed analysis is available with graphs, reports, segment analysis reports, friction circle graphs, track mapping, correlation reports, histograms, and much more.



Track Map w Segments



Road Race DataMite shock travel and other data in the Suspension Analyzer for detailed analysis.

New sensors are also available for the DataMite like the Wide Band A/F sensors (single or dual systems). A Remote Sampler can be purchased, great for chassis dynos. A clamp on Inductive Pickup, optical RPM sensors, less expensive pressure sensors, Stuska™ dyno RPM sensors, and spark timing measurement have also been developed.

Upcoming Products include:

Log Book for Road Race/Circle Track racing and Drag Racing. Cam Measurement electronics for updating your Cam Dr™ or a complete system with stand with a more advanced version of Cam Analyzer software.

As always, we appreciate your feedback on new systems and features you need. The best way to stay up to date is to



Upcoming Cam Checker System

get us your email address to start receiving our email Monthly Newsletter. Send an email to requesting the newsletter to feedback@performancetrends.com with your email address.



★ **To order a new product, demo CD or update, call 248-473-9230 !** ★

Check Program Update You are Ordering	Disk to Return * (proof of purch)	Cost	Check Program Update You are Ordering	Disk to Return * (proof of purch)	Cost
<input type="checkbox"/> Cam Analyzer v3.2	CA v2.0	\$ 30	<input type="checkbox"/> Circle Track Analyzer v3.2	CTA v2.0	\$ 30
<input type="checkbox"/> Drag Racing Analyzer v3.2	DRA v3.0	25	<input type="checkbox"/> Drag Rac Anlyzr Pro v2.0	DR Pro v1.1 DOS	40
<input type="checkbox"/> Engine Analyzer v3.2	EA v3.0	35	<input type="checkbox"/> Engine Analyzer Plus v3.2	EA+ v3.2	45
<input type="checkbox"/> Engine Analyzer Pro v3.3	EA Pro v2.1	65	<input type="checkbox"/> Engine Analyzer Plus v3.2	EA+ v3.2	45
<input type="checkbox"/> Port Flow Analyzer v3.0 E	PFA v3.0 (A-D)	35	<input type="checkbox"/> Roll Center Calc v2.0	RCC v1.1	30
<input type="checkbox"/> Demo CD of All Products	None	5	<input type="checkbox"/> Printed Users Manuals (call for details)		??

Sub Total (add cost of all updates ordered, user's manuals, updating from even older versions, etc) _____

Michigan residents add 6% sales tax (multiply Sub Total by .06) _____

Shipping (for CDs only: \$2 for US, \$3 for Canada, \$5 for all other countries. Call for shipping for user's manuals) _____

Total Enclosed (money order/credit card is fastest) Credit Card # _____ Exp _____

* **Disk to Return** is the version of the program you are updating from, and is required to prove original ownership. If you have an even older version than what is listed as **Disk to Return** above, call 248-473-9230 for the price of that update. If you want to **upgrade** to a bigger program, like from Engine Analyzer v3.0 to Engine Analyzer Plus v3.2, call Performance Trends for details. Also, **user manuals** come as Adobe Acrobat™ files for most programs on the CD. However, printed manuals are available.

Speed up your orders with **Visa, Mastercard, Am Exp or Discover**. Fax a photo copy of your old original disk (the Disk to Return listed above) to 248-442-7750 with your credit card #, exp date and your name as it appears on the card, shipping address and phone, or **preferably your email address** if we have any questions. You can also email the information with a digital image of the disk to feedback@performancetrends.com. Either way, we'll get your order going right away.

We make minor changes to our programs all the time. Visit www.performancetrends.com and click on Product Updates to see *exactly* what the latest version is (ex 3.0 B.006) and what minor changes have been made since we produced your version. The website gives instructions for updating to the latest version for some products via FREE downloads. These products include Compression Ratio Calculator, 4 Link Calculator, Fuel Economy Calculator, Fuel Injector Calculator, Trans Gear Calculator, Practice Tree, Lap Timer, Lap Mileage/Pit Stop Predictor and Rotating Inertia Calculator.

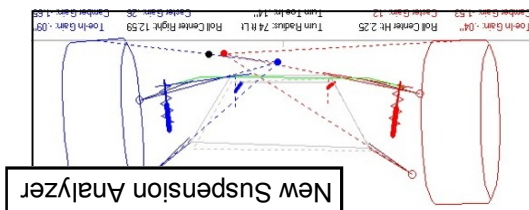
Return this coupon with payment **AND the original disk** (where required) for the product you are updating from as proof of original ownership. If you have questions, call 248-473-9230. Send all to :

Performance Trends Inc
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Livonia MI 48153 USA

Name _____
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