

# Factory Pro Tuning Centers

Tuning Problem	Old inertia Solution	EC997 solution	Conclusions
Install exhaust system and jet kit. Dyno bike and power seems OK, down or just not as high as expected. What's wrong or is it OK?	Look at all gear run and look at "shape" of the peaks. If it looks good, it's fine. Peak power is just low or good and that's just the way it is - because the shape is good. Maybe try a few more main jet changes....Spent an extra hour or so....	After referencing Steady State CO% to rpm and power, you KNEW that you were 1 main jet too rich. Change the main jet and you would have the proper main jet and the best power at high rpm, full throttle. Done.	EC997: Removes guesswork from main jet selection. Wizard not required.  Inertia: Leaves visual interpretation as last word - requires experienced Wizard - may or may not be the best main jet - but it's OK.
Rejetted carbs. Customer complains about rough running at cruise and coming off of stops.	Put on dyno. Lower needles. Works better on dyno. Test ride, seems ok.	Put on EC997, add 5 hp load and apply part throttle. Note engine smoothness and CO%/HC. Apply full throttle - holding at 3k. Check smoothness and CO%/HC. If reads rich, lower fuel level 1mm to lean for best power at 3K / full throttle. Reset mixture screws for best idle.	EC997: You wouldn't have had a customer comeback and had resetting carbs - saved an hour of billable labor.  Inertia: Lost a bit of power in full throttle/midrange, but the low end is lean enough for low speed cruise. Customer's complaint is satisfied. Explained 'split the difference' philosophy to customer.
The weather changed. Is the main jet still correct?	Do a full throttle roll on. Do an "all gear" run. Look at the graphs. If the shape is good the main jet must be OK. About 20-30 minutes work.	Warm bike. Bring bike up to 3/4 redline - apply matching load at full throttle and read CO%/HC values. About 10 minutes elapsed time.	EC997: Quick spot checks in short time.  Inertia: Have to do a full series of runs - doesn't give a definite answer as to mixture correctness - only tells if mixture is severely wrong.
Degreed cams to search for best power, but cam timing changes affect carburetion - need to separate to two factors.	Make cam timing changes, try to interpret graph plot shape to find that extra 1 hp. Maybe try changing some main jets.	Change cam timing, check main jet CO%/HC. Raise or lower main jet to match. Find that .25hp and keep it.	EC997: Quick data - Separates carb and cam affects - get all of the power possible.  Inertia: Not quite sure if power gain or loss was due to cam timing or carburetion or atmospheric conditions.
What's the best main jet.	Spend an hour or so. Change main jets. Any one of 2 or maybe 3 is OK. They all seem to make about the same power. Pick one	Change main jets. Pick the 1 jet size that produces the best power. No guessing.	EC997: Up to .2hp power accuracy with virtually perfect repeatability - multi consecutive tests.  Inertia: Run it a few times till

# THP Data Comp<sup>tm</sup>

Increase Profits and work quality.

## Compare to current practices...

(A dyno that nearly TELLS you what to do - designed by people who do the same work as you!)

- Record customer info, while warming bike, then  
Do Baseline Power Test.  
Do 60-80 mph Accel Passing Test.  
Do Computer Loaded Road Sim Test. 0.5 hr
- Install exhaust system and carb kit at base settings. 1.5 hr
- Dyno - do Full Throttle Step Test, monitor CO% 0.3 hr
- Inspect power graphs, CO% readings and rpm notes:  
idle too lean? open fuel screws  
5.5hp load @ 60 mph too rich? check for missing / hi CO%  
3k = float height too rich? Rich miss? lower fuel level 1mm  
4k = taper start too rich? Rich miss? lower needle 1 position  
6k = needle pos. too lean? Lean miss? raise needle 1 clip  
10k = main jet too rich by 2%? Decrease mj 1 size  
Make changes 0.7 hr
- Do Full Throttle Step Test to verify changes  
Do Pass Test to show accel improvements  
Do Road Sim Test to test:  
every possible throttle position at  
every possible rpm and  
every possible load level from  
downhill decel to top rpm - sustained redline load 0.3 hr
- Print graphs, reports. You are done. Total elapsed time 3.3 hr  
flat rate: @\$54 6 hr \$324  
saved billable time 3.3 hr \$178.20  
extra profit difference +\$145.8

Ok, so it's not a perfect world and you probably won't breeze through all carb tuning jobs, so, even assuming a 4 hr average for installs, and you do only 5 jetting jobs per month, it's still \$100 each an extra \$500 / month and that's a lease payment. Less expensive dynos simply can't do the job as quickly or as accurately as the EC997a.

We've been using this dyno daily for the last 5 years - honing the production design to 1 person loading and testing, evolving wickedly fast customizable software that doesn't require a PHD to do a sweep test! (But it WOULD impress someone who knows the ins and outs of dyno data acquisition!) You could drop an emulsion tube onto the top of a 50# weight, count the number of bounces, tell you how hard it bounced each time, if it rolled off, bounced off or stayed on the top of the weight and even which brand of emulsion tube (just kidding about the brand thing..) with our equipment!

By the way, optionally it's got plenty of analog and digital inputs for fuel flow, air flow, thermocouples other sensors and could be setup to sample up to 75,000 samples per second if required! It's definately not a "one trick inertia pony".

**The Factory EC997a Eddy Current Dyno**  
For Professionals who make a living in the Motorcycle industry  
In stock - place your order now!



web site: [www.factorypro.com](http://www.factorypro.com)

fax 415.492-8803

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## Factory Pro Exclusive Tests

### **Auto Step Test - Full Throttle Power**

Complete computer control lets you check any and all rpms for carburetion performance. Tell the computer low limit rpm and hi limit rpm and the step increment, say, start at 2,000 rpm, end at 6,000 rpm and use 500 rpm increments - **3 clicks of the mouse-on only 1 screen.**

All you do then is turn the throttle.

By the way, if you are continuing a series of tests - forget the 3 clicks mentioned above. The setup is automatic. **Compare.**

### **Full Throttle Power with Integrated EGA System**

Same operation as std Full Throttle Test, with, at most, 1 extra mouse click. Now you have RPM, HP, Torque AND CO%, HC, CO2 and residual Oxygen - at each rpm point!

A stock engined cbr600f3 makes best power at 4.5% CO, it tests at 5.5%. Drop main jet 1 size. for 4.5%. You have the correct main jet.. No guessing. Less operator experience required for perfect work.

Compare EC997 w/ Integrated EGA to Inertia Testing "Shape of the Curve" guessing - there is no comparison. Period.

### **True Sweep Test - Acceleration Smoothness**

Tell the Software that you want a constant acceleration sweep test - not just that you want one, but how quickly do you want to accelerate? Specify 10 for data that generally equates to a Step Test for true, fully loaded power, as in top gear - high speed, to 18,20.25+, similar to dynojet load on some bikes, to 30 for a low gear acceleration equivalency.

Engines produce different amounts of power based on the load applied. The key to successful tuning is understanding loads experienced and being able to duplicate loads to tune for the engine's Real World Operating Conditions.

True Sweep shows very subtle nuances in power production in very small ranges.

### **Sweep Test Accuracy - Sweep Test accuracy requires several values to deliver True HP <sup>tm</sup> figures.**

**RPM, Braking Force applied, Acceleration Rate and Inertia Value of the dynamometer AND vehicle.**

The first 3 values are relatively easy to measure adequately, but the Inertia Value for each MC is much more difficult. Most other dyno software estimates an average value and applies it to every vehicle. Some dyno companies supply an inertia value for some representative values for some popular models That won't help you when trying to explain why customer A's bike makes 2 hp less than customer B's bike. Obviously, if the rotating mass of the vehicle is different between different vehicles, (like installing a new rear tire, for instance) the HP figures will be different. But if your dyno can't show that....

An extreme example are 125 MX bikes - delivering more power at the rear wheel, according to a common seen dyno manufacturers, than the manufacturer claims at the crankshaft! You won't see that on an EC997! Never.

You MUST be able to calculate an inertia value on your dyno for honest HP values! Otherwise your sweep tests will NOT ever equal your Step Test data or duplicate Real World Performance - except by accident! (But if you don't really care...)

### **Auto Decel <sup>tm</sup> Feature - Be easy on engines. (on customers, too)**

Customers hate to hear their prize possession backfiring and bucking under high rpm deceleration. Any engine builder knows that prolonged, unloaded engine deceleration can damage precious engine internals - with spectacularly disastrous results, 2 cycle engines will even seize.

Our **Auto Decel** feature engages and removes the drama and helps prevent engine trauma by actively slowing down the bike after each run, quickly, effortlessly and smoothly. Anticlimactic. **Compare.**

### **Inertia Test**

Need an inertia test? Go to setup screen and select Simulated Inertia Test. Simulate ~250bs LMR to maximum load. Easy setup.

### **Compare to Dynojet HP figures**

Since Dynojet has their own, unique HP scale and you will, at some time, want to compare your test results with their scale, Factory Pro has developed, using the flexibility of the Data Comp <sup>tm</sup> control software, a special dynojet comparable test for similar HP numbers! **Compare that to dynojet getting True HP <sup>tm</sup> figures!**

Much more!



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# EC997a

# Low Inertia Eddy Current Dynamometer

## PROVEN test routines

At every dyno facility, there is usually 1 person who does most of the tuning.

During the busy season, work production gets slowed by the fact that usually, that same person does most of the testing, among many other things! If there was just a way for someone else to test like he or she does.....

### AUTOMATIC COMPUTER LOAD CONTROL

Test procedures are personal - the result of years of experience. You know what works - simple and clear.

With *Auto Step*, you can set the rpm points to what YOU want - in any sequence or order. Allows "Just twist the throttle" testing - the computer lets the engine accelerate to the desired test rpm, adds load, senses when power and load are stabilized and records power automatically - plotting immediately on the screen to show improvement (or power loss), then increments to the next programmed rpm! Map out a series of test points. Let someone else do the test - you do the analyzing of tuning changes to improve power. You can program your own, too.

### Training:

Training a mechanic to test takes very little time.

For example, we took Joe out of the shop, sat him on the (his) bike and told him to do a step test from 3k to 12k. He opened the throttle, the computer took over the load and stabilized at 3k, recorded the data, including CO% and HC. He let off the throttle and asked what to do next.. We said "Do 4,000 rpm - open the throttle." So he did. The computer recorded 4k, etc.... We left the room to go do some other stuff.. Joe came out 5 minutes later with a completed test....to 12k. Done the right way.

PS. We're working on teaching the computer to talk and tell you what to change... After that, we'll get it to change jets and make coffee in the morning...

Ever wonder how a jet kit is developed? Check out Cruiser magazine's Evans Brassfield's Vulcan Classic R&D article!

### So easy, even a journalist can do it!

Sample Data File - all rpm, mph, bhp, torque are automatically logged with full computer load control!

EC997a Auto Step 4/10/98 4:42:43 PM

SUZUKI\GXR6\_98\49\_STATE\BOLLES\_T\56afmj47.stp

desc:		RPM	MPH	BHP	Ft/Lbs	CO%	HC	CO2	Oxygen
vehicle:	NO ELEC MAJ,+4 adv	29.72	31.1	13.1	23.1	7.61	1134	9.22	1.16
mileage:	Suzuki, gsxr600, 49 state,98	39.86	41.7	20.7	27.3	5.70	768	10.73	0.75
owner:	was 1257, now NA	49.81	52.1	29.5	31.1	7.01	1148	9.73	1.06
exhaust:	Bolles, Tom	59.79	62.5	39.2	34.4	7.56	1345	9.26	1.25
air filter:	Yosh Duplex stainless RS3	69.85	73.0	45.5	34.2	8.53	930	9.06	0.72
ignition:	Stock	80.03	83.7	56.6	37.1	7.54	890	9.70	0.70
carb:	+4 ADVANCE	89.64	93.7	69.6	40.8	5.12	1412	10.87	1.18
pj:	prototype	99.68	104.2	77.4	40.8	4.77	1467	11.13	1.13
paj:	#15, 5.0 turns out	109.83	114.8	83.2	39.8	5.70	1247	10.67	0.92
crb spg:	#xx	120.04	125.5	84.3	36.9	6.11	1388	10.35	1.04
float height:	525-55-28-19	129.71	135.6	82.1	33.2	5.04	1334	10.95	1.11
needle,1/4?:	8.0								
needle,2/3?:	0987g-92j-40u/2								
mj,1/4:	0987g-88j-40u/2								
mj,2/3:	#137.5								
maj,1/4:	#142.5								
maj,2/3:	#1.00								
fuel:	#1.40								
notes:	Beacon 92								
cam timing:	+4 advance								
Temp- +85 Bar- 30.04 H2O- 32	stock								
SAE Correction Factor - 0.9914									

Note: This a partial data file, for catalog purposes. Actual files include more data points .

This file includes optional Factory Pro Auto Logging EGA data.

Most of us have run awkward software. Most other data acquisition software was designed by software programmers - not performance tuners. If you can find another dyno company owner who spends most of his time in the dyno room, testing and designing performance products, you will probably find accurate, logical software, too! Marc

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**EC997 in Print!!**



"This is probably the best way to really fine-tune an engine over the entire rpm range."  
**Roadracing World  
March 98**

"Craig Erion would run the bikes on his Factory EC997a Eddy Current dyno."

"The eddy current dyno was chosen because it has the ability to hold a steady rpm, as compared to the common....."

**Sportrider Magazine  
December 99**

# Factory Pro Tuning Centers

## Distributor Listing

### US Distributors

Cycle Tech  
Chapman Performance/Legend Car  
Lemans Corp.  
Lockhart Racing  
Muzzy Racing  
Targa  
Tucker Rocky Distributing  
Two Brothers Racing  
Vance and Hines Racing  
Wheelsmith Racing  
White Brothers  
Yoshimura R/D of America

### Factory products are used / recommended by:

<b>Bartel's Harley Davidson</b>	<b>USA</b>	<b>883 Twinsports</b>
<b>CJ Kawasaki / R. Gadson</b>	<b>USA</b>	<b>Prostar #1 zx6r</b>
<b>D&amp;D Exhaust</b>	<b>Texas,USA</b>	<b>all models</b>
<b>DeVries Racing</b>	<b>Europe</b>	<b>yzf600 600 Supersport</b>
<b>Dream Machine</b>	<b>Spain</b>	<b>cbr600f3</b>
<b>Honda of Australia</b>	<b>Australia</b>	<b>honda cbr600f3, cbr900rr</b>
<b>Hypercycle Suzuki</b>	<b>USA</b>	<b>gsxr600/ #1 AMA 750</b>
<b>Muzzy's</b>	<b>USA</b>	<b>zx6r, zx7r, zx9r</b>
<b>Steve Cramer Products</b>	<b>Australia</b>	<b>gsxr600</b>
<b>Sudco</b>	<b>USA</b>	<b>all brands</b>
<b>Suzuki of Canada</b>	<b>Canada</b>	<b>gsxr600/750</b>
<b>Suzuki of France</b>	<b>Europe</b>	<b>gsxr600/750</b>
<b>Team Kinko's 95-97</b>	<b>USA</b>	<b>zx6r, zx7r</b>
<b>Tilley's Harley Davidson</b>	<b>USA</b>	<b>883 Twinsports</b>
<b>Two Brothers Racing</b>	<b>USA</b>	<b>honda and more</b>
<b>Vance and Hines Racing</b>	<b>USA</b>	<b>yamaha</b>
<b>Yoshimura USA(NEW!) USA/world</b>		<b>all models</b>

## Worldwide Distributors

<u>Country</u>	<u>Company</u>	<u>Fax</u>	<u>Phone</u>	<u>Website</u>
Australia	Terac Eng. Pty LTD	011-61-3-9315-1435	011-61-3-9314-5301	
	Steve Cramer Products	011-61-3-9587-2018	011-61-3-9587-1466	<a href="http://people.enternet.com.au/~scp/">http://people.enternet.com.au/~scp/</a>
	scppage2.htm			
	Mick Hone Dist (Yosh)	011-61-3-9899-6661	011-61-3-9890-0304	
Canada	Tucker Rocky Dist			
Denmark	Holtug MC ApS	011-45-53-70-00-43	011-45-70-00-48	
England	Straightline Racing(all)	011-44-155-381-1866	011-44-155-381-1855	
	Carbon Tech (Honda)	011-44-420-543443	011-420-85585	
Finland	All Right	011-358-9-7533830	011-358-9-773-4545	
France	French Co	fax	011-33-160.86.16.58	
Germany	Kainzinger	+ 49(0)6206/963,297	+ 49(0)6206/963,298	<a href="http://www.kainzinger.com">http://www.kainzinger.com</a>
Guatamala	Eximpovia	011-502-291-2124	011-502-2-374394	
Italy	BMC	011-39-51-852659	011-39-51-6971511	
Benelux	MotoPro Sport Racing	011-31-598-630260	011-31-598-630267	
Singapore	Sporting Motorcycles	011-65-253-6312	011-65-250-5508	
Spain	Dream Machine	011-34-6-335-5304	011-34-6-335-5301	email: <a href="mailto:joe.martins@ibm.net">joe.martins@ibm.net</a>
South Africa	Craig's Spares	011-27-21-510-5481	011-27-21-511-5980	
Sweden	Mc Doktorn Uskali	011-46-457-811-80	011-46-457-811-80	
Switzerland	Pichard Racing	011-41-21-691-02-67	011-41-21-691-02-23	<a href="http://www.pichard-racing.com">http://www.pichard-racing.com</a>

Working round the clock to provide the highest quality tuning products possible to the most demanding people around the world - you and your customers.



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# Factory Pro Dyno Centers

## Plug in, power up. Save \$1500

### Top of the line MC/Quad EC997 with

*Integrated EGA, Auto Control Software, Hardware, Slot Machined drive roller, ramp, computer/EGA cabinet, cooling system, digital weather station, infrared heat gun.*

<b><u>M/C/Quad</u></b>	<b><u>Low Inertia EC997a Eddy Current Motorcycle Chassis Dynamometer</u></b>	<b><u>22,500</u></b>
Hardware inc:	Dyne chassis, Std Drive Drum, precision Load Sensor and Speed Sensors, DAQ unit, cables, PAU box, manual control box.	
Software inc:	Factory Pro preconfigured <u>Manual</u> Test Software, see below for <u>Auto Control</u>	
Training inc:	Choice of 5 days at Factory Pro or 3 days at your location (+ travel and lodging)	
<b><u>Auto Control Computer Control Package (when purchased with EC997 dyne)</u></b>		<b><u>2,500</u></b>
Software features:	Factory Pro exclusive preconfigured Auto/Manual Test Software Auto Increment, Auto Step                      True Load Sweep True Wind Load                                      Vehicle Simulation Test Inertia Value Testing (A true test of basic data system quality)	
<b><u>Exhaust Gas Analyzer, integrated with EC997 Series dyne</u></b>		<b><u>5,000</u></b>
Hardware features:	Factory Pro digital Exhaust Gas Analyzer, Auto Zero, Auto Record	
Software features:	Factory Pro Auto Logging (Log CO, HC, CO2 and O2 at each rpm step point - automatically)	
<b><u>Water Separator Assembly</u></b>	High Speed exhaust gas water remover - A dry EGA or O2 sensor is a FAST and Happy EGA system! <u>Recommended</u> for high volume testing, FI tuning, high humidity areas	<b><u>2,000</u></b>
<b><u>Hi Traction Drive Roller</u></b>	Slot Machined drive roller (not for LD57 Series and variants)	<b><u>500</u></b>
<b><u>Cooling fan package, basic</u></b>	2 fan system, Prevent overcooling! NOT DYNO DRIVEN!	<b><u>1,500</u></b>
<b><u>Weather Station</u></b>	Measure baro, temp and humidity to correct to SAE or DIN standards	<b><u>300</u></b>
<b><u>Infrared Thermometer</u></b>	Point and shoot temp reading - REQUIRED for monitoring case and coolant temperatures for repeatable tests.	<b><u>200</u></b>

**Suggested Order:**

**EC997a Eddy Current Chassis Dyne**  
**Auto Computer Control**  
**Integrated Exhaust Gas Analyzer**  
**Water Separator Assembly**  
**Cooling Package (basic)**  
**Weather Station**  
**Infrared Thermometer**

**Total**     **34,500**  
**Savings**     **1505**

With 7,550 down, 60 month lease, \$1 buyout at end of lease term, payment ~\$500/mo. oac

**Package price**     **\$32,995**

Options: Heavy Duty loading ramp 7'x3', 3/8" diamond plate	\$1000
Computer cabinet, roll around, 2'x2'x4'	\$1000
3hp fans 220v single phase	+\$1000

Other accessories available, as quoted.

Also, upgrade DAQ systems for other eddy current dynamometers that can't do inertia testing. Leasing (with flex payments) and financing available on approved credit. Generally as low as ~\$250/mo/60 mos. per \$10k borrowed, on approved credit. Trade-ins accepted.

Ship date ARO 30-60 days from deposit on standard units. All prices and specifications are subject to change.



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		<u>Total    29,500</u>
		<u>Savings    1505</u>

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<b><u>Hi Traction Drive Roller</u></b>	Fully patented answer to traction on high liter bikes, excellent traction / tire life even on AMA Superbikes.	<b><u>800</u></b>
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<b><u>Exhaust Gas Analyzer, integrated with EC997 Series dyne</u></b>		<b><u>5,000</u></b>
	Hardware features: Factory Pro 4 gas digital Exhaust Gas Analyzer, CO%, HC, CO2%, O2% Auto Zero, Auto Record, Auto Start, Software features: Factory Pro Auto Logging (Log CO, HC, CO2 and O2 at each rpm step point - automatically) High Speed exhaust gas water remover - A dry EGA or O2 sensor is a FAST and Happy EGA system! <u>Recommended</u> for high volume testing, FI tuning, high humidity areas (also available as add-on to less well designed EGA systems, including K&L)	<b><u>2,000</u></b>
<b><u>Water Separator Assembly</u></b>		
<b><u>Cooling fan package, 110v</u></b>	2 fan system, Prevent overcooling and overheating! (2x1hp 110v high pressure) Recommended for mild climates, at sea level	<b><u>1,500</u></b>
<b><u>Cooling fan package, 220v</u></b>	2 fan system, Prevent overcooling and overheating! (2x3hp 220v high pressure) <u>Recommended</u> for hot areas / high humidity / high altitudes / high volume testing The best standard cooling package in the dyno industry	<b><u>2,500</u></b>
<b><u>Cooling fan, muffler</u></b>	Used for cooling carbon fiber mufflers while testing, (110v)	<b><u>500</u></b>
<b><u>Weather Station</u></b>	Measure baro, temp and humidity to correct to SAE or DIN standards	<b><u>300</u></b>
<b><u>Infrared Thermometer</u></b>	Point and shoot temp reading - <u>REQUIRED</u> for monitoring case and coolant temperatures	<b><u>200</u></b>
<b><u>Ramp</u></b>	Factory Pro exclusive: Easy loading "concave, convex" easy to start on the ramp, hump it up and easy to roll forward on top! 7'x4', 3/8 diamond plate - The BEST dyno ramp in the industry. roll around, 2'x2'x4'	<b><u>1,500</u></b>
<b><u>Computer cabinet</u></b>		<b><u>1,500</u></b>
<b><u>Training</u></b>	Choice of 5 days at Factory Pro or 3 days at your location (+ travel and lodging)	<b><u>1,500</u></b>
<b><u>F-USA Software</u></b>	Get a leg up on F-USA True HP racing!	<b><u>500</u></b>

<b><u>Suggested Order:</u></b>	<b><u>EC997a Eddy Current Chassis Dyne</u></b>	<b><u>Slotted Drive Roller</u></b>
	<b><u>Auto Computer Control</u></b>	
	<b><u>Integrated Exhaust Gas Analyzer</u></b>	<b><u>Cooling Package (220)</u></b>
	<b><u>Weather Station</u></b>	<b><u>Infrared Thermometer</u></b>

Also, upgrade DAQ systems for other eddy current dynamometers that can't do inertia testing. Leasing (with flex payments) and financing available on approved credit. Generally as low as ~\$250/mo/60 mos. per \$10k borrowed, on approved credit. Trade-ins accepted.  
Ship date ARO 30-60 days from deposit on standard units. All prices and specifications are subject to change.

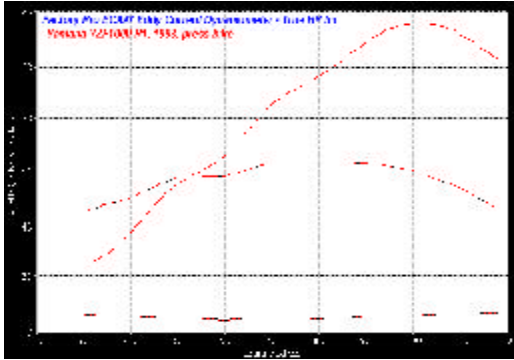
# EC997a

# Low Inertia Eddy Current Dynamometer

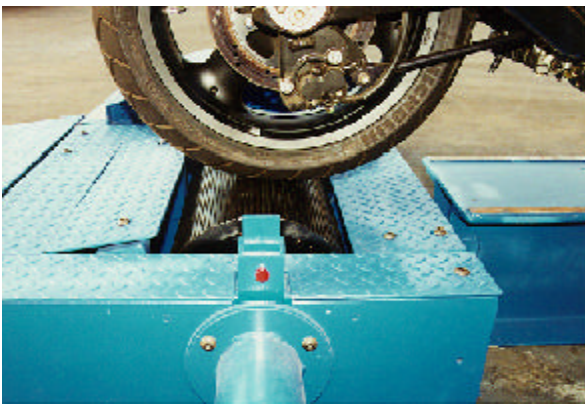
## Solid construction - High Quality!



*low profile chassis - 1 man loading  
no need to sink dyno in floor.*



*2 click display change -  
cluttered "Overlay files" are banished!*



*machined drive roller -  
offsetable front wheel beam -  
integral load-lock for safe loading -  
integrated Tie Strap System (not shown)  
1.5" keyed external input shaft for  
chain drive*



*What makes it the best? Compare these features.*

### Safe, 1 man loading

*compare to loading up 18"-20" high -it takes 2.*

### 5 year Drive Roller Traction Guarantee

*compare to cheap knurling with no guarantee..*

### Integrated Exhaust Gas Analyzer option

*compare to "No problem - it's simple - it's just a 0-5v signal (no, it's not simple...)*

### THP Data Comp tm Software

*we have tests like: (they don't)*

*Float level Test, Main Jet Test, Needle Height Test, Single Point Test, Multi Point Test, Accel Test, Auto Step Test, Road Load Test - compare to other systems?*

*They say "No problem, we can do that." - leaving you to design your own test procedure (Like you have time to do that...) or "You don't need to do that."*

### TruView tm Data Analyzing Software

*designed to display data so you can make up to 5 changes after each dyno test - and have all of them correct!*

*If you could see that you need to:*

*drop the mj 2 sizes,  
lower the needle 1 clip pos,  
lower the fuel level 1mm and  
open up the fuel screws .5x*

*in one test vs. 3 or 4 on other eddy current systems - It appears you would save 1-2 hours on each carb tuning job.*

### This is important

*It's the test procedures that allow meaningful tests that show pertinent data, if all other dyno features were the same. Watching an eddy current dyno being used in sweep mode all the time is a poor use of the exquisite control that eddy current systems can provide. With proper test procedures, tuning quality is vastly improved over any sweep test data and it's done in FAR LESS TIME!*

### Proven Results?

*Factory Pro carb recalibration kits have been used in more AMA / WERA pro racing championship winners than all other carb systems combined. The same test procedures are available exclusively on the EC997 Eddy Current System.*

web site: [www.factorypro.com](http://www.factorypro.com)

fax 415.492-8803

(800)869-0497

(415)491-5920

# EC997a

# Low Inertia Eddy Current Dynamometer

## Factory Pro's EC997 - the pro's choice.

Factory Pro developed the first cost effective, usable computer controlled eddy current braking system for use on a motorcycle chassis dynamometer.

We prototyped the system in 1993 - using it and gaining priceless experience through intense, daily use, developing carburetion and ignition tuning products. Many problems appeared throughout that time - some foreseen and some totally a surprise. We found out that knurled drive rolls wear out (it took over a year of daily use), that even the best automotive experience in computer control was not adequate to control the steep/ or vague torque curves that mc engines can typically produce (Triumphs, TL1000's and cbr900's are easy - but tz250's, 13k sportbikes with rough carburetion and even high hp Buells are a different story!) and that most dealerships are understaffed and need to be able to do tests quickly AND be able to analyze the information to make decisions that allow them to do less testing and get more information out of each test. The last thing that we wanted to hear from our customers is "Gee, I didn't know the software was going to be this complicated." - that's a direct quote from an individual near Monterey, CA who didn't purchase our system.

**We attacked the problems that a smaller operation, typical in the MC industry would have, one by one.**

**We redesigned the chassis to make it a low 12" high** - 1 person can easily load, clamp and strap - easy and safer solo loading.

**We made the strongest front wheel clamp** - the most rigid, wide HD size opening and with a non air, positive screw / handwheel action for absolute reliability.

**We developed a drive roller system that delivers far superior traction than knurled rollers** (of any diameter) - We designed the roller to complement a motorcycle tire, allowing the tire to work as designed, not to force it to stick with extra straps and pressure!

**We developed a temperature compensated Integrated Exhaust Gas Analyzer.** It took sophisticated internal software to do - you can't simply use a 0-5v signal from the analyzer - it's a whole, stand-alone program requiring 100's of hours of programming and debugging.

**We attack problems today - so you don't have problems tomorrow.**



### 3 Way Dyno

### No Spin Drive Roller

### Long Adjustable Wheelbase

### Adj. front wheel beam

### Compare.

### Heavy Duty Steel Construction

### Wide Front / Big discs

### Low Profile Dyno Chassis

### Removeable access plates

### Front Wheel stability

### 2 cycle testing

### Legend/Mini Sprint

### True Rear Wheel (TRW) HP tm

### EC997 Software

### Intuitive Software

### Exportable Data Form

### Data Format

### Steel Ramp

### Cabinet

### Computer

**Rear Wheel** for quick, efficient tests, **Chain Drive** for long term testing, **Engine Dyno** for engine only testing.

Unlike other dynos, **150+ True HP at rear wheel - No Smoke - NO Spin** - Day in, day out, no problem.

Unlike other dynos, we hold 92"+ wheelbase, Dragbikes, Cruisers. No adapter needed for long wheelbases!

Unlike other dynos, we allow side to side rear wheel / drive roller contact adjustment for extended roller life.

Sturdy steel material - 3/8" diamond plate, 12' channel - Sheet metal is good for heat shields - not dyno chassis!

Unlike other dynoes, 7"+ capacity. No expensive wide HD/Cruiser wheel adapters needed **Compare!**

**Unlike other dynos, only 12' high!** 1 man operation - Safer/quicker to load. **Compare** to 18 and 20"!

Drop a bolt under the dyno? Remove 2 bolt access plates - 3 minute job. **Compare to big PITA on others.**

Unlike other dynos, Full Contact Clamp - Behind and above front axle - holdbike upright, even w/o straps!

Unlike other dynos, save hundreds of dollars - No additional brake required to prevent deceleration seizing!

EC997 owners test Legend and Mini Sprints without costly additional hardware!

Compare to any other high quality dyno - not a self proclaimed standard common to only itself! **Compare!**

1000x Oversampling base sample rate. Conceived, prototyped and developed in-house - to be used by us to develop our own products - including the carb kits used by the overwhelming majority of AMA and WERA professional racers and tuners. Customize the screens. Pentium class, Windows native software. Networkable.

THP Data Comp Software is built with a logical, natural work flow. Good software "makes sense" right away.

Easily export data and notes to Access, Dbase, Excel, Foxpro, Lotus, Pagemaker or straight to the Internet!

Text File Format - compatible with many onboard systems - just plug in existing sensors and conditioners into

EC997 optional software - fully integrated - saving time swapping sensors!

Unlike other dynos, standard equipment! Wide, 3feetx7feet 3/8" diamond plate steel for safe bike loading.

Unlike other dynos, standard equipment! 2x2x4ft Store computer & printer - keep computer shielded and safe.

Pentium, networkable

Also, Data Acquisition Upgrades available for other brands of dynamometers, price, as quoted. **Popular Options**



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# *Factory Pro Tuning Centers*

**Low Inertia**

# **EC997**

**Load Control Dyne with  
Integrated EGA**

- Since 1993, we've refined **Full feedback Closed Loop Load Control** for the truest controlled acceleration and load control. - Nobody in the mc industry can control an eddy current dyne like we can.
- Steel Plate construction - Durable and very low maintenance - The dyne is user calibratable for maximum accuracy.
- Low Inertia drive roller (pat pend) for far less engine wear during testing as compared to high inertia dynes
- Large diameter, slot machined (pat pend), drive roller w/ 10 year traction guarantee as compared to no guarantee
- High Sampling Rate ensures incredibly descriptive graphs and detailed text form data as compared to cryptic ASCII
- Drive train condition problem diagnosis in coast down test
- Automatic Correction Factor feature - correct all hp to "standard" air for comparisons - regardless of test locations
- Real time Reference RPM computer display (absolutely error free repeatability)
- Real time MPH computer display (repeatable to +/-1/100th of 1%)
- Real Time HP and Torque display while testing (repeatable to +/-1/100th of 1%)
- Detect spark plug misfires with a simple timing light (on non coil-over applications)
- Integrated EGA for QUICK tuning - Tune in 1 test / 1 carb setup vs. 4 dj tests and 4 carb setups
- Software calculates TCP (Tire Creep %)



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**(415)491-5920**

# Factory Pro Tuning Centers



AMA Pro Thunder #1 HMC Motorsports rider: Shawn Conrad tuner: Travis

## RoadRacing World

March '98!

This is probably the best way to really fine-tune an engine through the entire rpm range.