

# RACE TECH

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<IP FEGV Set Up\_Vintage.doc> . M Wiley © 11-28-11 MW updated 10-26-12 ©

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## Vintage & Damping Rod Style Fork: General Set Up & Tuning

- Blue #40 Gold Valve Spring set to 2-3 turns of preload is typical initial setting. Best working range is 1-5 turns; if less or more Emulator Valve Plate preload is needed move to the softer #26lbs Silver Spring OR up to the #64 Yellow Spring with 3 turns as the starting setting. Total tuning range is ½ - 7 turns for any given spring, 2-5 turns optimum range. Gold Valve Kits are supplied with optional valve springs as needed.
- 15wt Fork Oil is typical. Set to 120 - 160mm Oil Level (Fork Spring OUT, Gold Valve IN, chrome tube at bottom of stroke: top of oil to top of fork tube) Oil Level Tuning Range is 100-180mm in general.
- 15 - 20mm initial Fork Spring Preload with Race Tech FRSP S Series Street Fork Springs. 5- 15mm initial Fork Spring Preload with Race Tech FRSP Dirt Springs. Over Preload Tuning Range is 2-30mm in general

## RACE TECH FORK SETUP & TUNING NOTES:

To adjust the Gold Valve Emulator you must remove it from the fork. When you remove the fork springs use a twisting motion to avoid oil drips. To remove the Emulator, use a parts grabber. Adjust the Emulator Valve Spring Preload a half turn at a time. More Valve Spring Preload will make the forks stiffer. Before installation, be sure the jam nut on the Emulator is snug using a socket. Adjust Fork Spring Preload with spacer length or washers. Adjust Fork Oil Level with Fork Springs OUT, Gold Valve IN, Forks bottomed out (chrome tube at bottom of stroke)

### TUNING VARIABLES

VARIABLE	SETUP	OPTIONAL	PRIMARY EFFECT
Gold Valve Spring Preload		0 - 7 Turns	Overall firmness, controlling a mushy feel and the speed the front end dives under braking. 2 - 4 Turns initial setting is standard. 1 -5 turns usable range
Gold Valve Spring Rate		#26 Silver #40 Blue #64 Yellow #101 Red	Overall firmness and the ride on square shaped bumps. Note that most 33-36mm vintage forks work better with the 40lb/in spring at 2-4 turns
Emulator Low Speed Compression Damping Holes		1 - 4 Bleeds: Drill dimples as needed	Initial fork movement low speed damping & plushness before valve plate opens; small bumps, chatter, etc.
Fork Oil Viscosity		5wt - 30wt	Use oil viscosity to set rebound, this affects traction and stability. Heavier oil equals slower rebound, lighter oil equals quicker rebound.
Fork Oil Level		100-180mm	Sets Final Firmness in the last 1/3 of Fork Travel
Fork Spring Rate		.38 - 1.0kg	Holds up weight of Bike/Rider, Sets Ride height, Sag, Fork Travel, Overall Front End Firmness
Fork Spring Preload		5-35mm	Fine Tunes Ride Height, Sag, Fork Travel, Firmness of Fork

\* Measured from zero preload (no tension) on the Valve Spring. To find zero preload back off on the adjuster bolt until the spring is loose then tighten it until the spring just touches. Use oil viscosity to set the amount of rebound damping, then adjust the compression with the Emulator settings. The Emulator does not affect rebound, however oil viscosity does. The primary compression adjustment is the amount of Emulator Valve Spring Preload. Increasing Valve Spring Preload makes the fork stiffer. The effect of all the variables will overlap providing extreme tuning flexibility.

### Tuning Details:

- Gold Valve controls Compression Damping; as the fork hits the bump; More/Less Gold Valve spring tension makes compression Stiffer/Softer. Changing to different Emulator Springs will Increase/Decrease overall stiffness by changing the slope of the damping curve & what (fork) speed the valve plate will open. Half Turn of Emulator Spring Preload is noticeable, full turn is significant; Tune in half turn increments until you find your best setting. Note: *Emulator Spring controls high speed fork movement and how fast the valve plate opens.*
- Additional low speed damping tuning variable are the number of bleed holes in the Emulator Valve Plate (under the colored spring). Emulator Plates may have either 1 or 2 pre-drilled holes in the valve plate. Adding additional holes (up to 4, same size as originals) will add plushness to low speed fork response (small bumps, slow fork movement). This is a good way to address any fork chatter issues you may encounter on the race track or harshness over small ripples & such on the street or trail. These holes control oil flow velocity that too low to open the spring loaded valve plate. NOTE: *Bleed holes have little effect on high speed damping (large bumps, fast fork movement)* Drill out the dimples as desired for 4 hole bleed (preferred most vintage apps)
- Oil Viscosity controls Rebound Damping; how quickly fork re-extends after the bump, thicker oil slows fork movement down, thinner oil speeds fork movement up: 5/10/15/20/30wt etc. Please note that Suspension Oils are not consistent between brands in viscosity! Choose a brand and stay with that brand to ensure consistent results when making changes! NOTE: *Oil viscosity should be used for tuning rebound damping, for compression damping changes adjust the Gold Valve Emulator.*
- Fork Spring Preload controls Ride Height 15-25mm optimum useable range/Street & 5-15 Dirt. Move down/up in spring rate if you fall out of this range NOTE: *Tune in 2 - 3mm adjustment increments using washers supplied with spring kit or PVC spacer length when needed.*
- Oil Level controls bottoming along with fork stiffness in the last 30% of fork travel. Tune in 10mm Increments. Measure with Fork Spring out, Gold Valve in, chrome tube at bottom of stroke: top of oil to top of fork tube. NOTE: *Tuning fork oil level will only affect fork feel in the last 30% of fork travel. Use this variable to address bottoming issues or if not using 85-90% of full fork travel.*

There is no real 'right or wrong' on set up, rather what works for any given rider for their particular riding style with desired feel & feedback. We encourage experimenting with settings to find your personal 'sweet spot' Always take notes & record your changes. It is easy to go back to the original settings noted above with Vintage Damping Rod Forks... **'The best you have ridden is the best you know!'**

