

RACE TECH

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<IP FEGV Set Up_Street.doc> M Wiley © 9-25-09

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Damping Rod Fork Race Tech General Initial Set Up & Tuning Guide

- Vintage, Cruiser & Touring models generally work best with Blue #40 set to 2-4 turns of > best working range is 2-5 turns; if less or more Emulator Valve Spring preload is needed move to the softer #26lbs Silver Spring at 3-4 turns OR up to the #64 Yellow Spring with 2-3 turns as the starting setting.
- Sport & Sport Touring models prefer Yellow #64 Gold Valve Spring set to 2-3 turns of preload > best working range is 2-5 turns; if less or more Emulator Valve Spring preload is needed move to the softer #40lbs Blue Spring OR up to the #101lbs Red Spring with 2 turns as the starting setting although use of the Red 101lbs springs is rare on these applications.
- Use OSFO 15 Fork Oil (15wt Spectro) set to 130-150mm Oil Level (Fork Spring out, chrome tube at bottom of stroke) as a starting point. Fork Oil Level Tuning Range is 110-180mm as a general rule.
- 15mm initial Fork Spring Preload with Race Tech FRSP S Series Fork Springs, 10-35mm is typical tuning range

MOTORCYCLE MODEL: _____

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

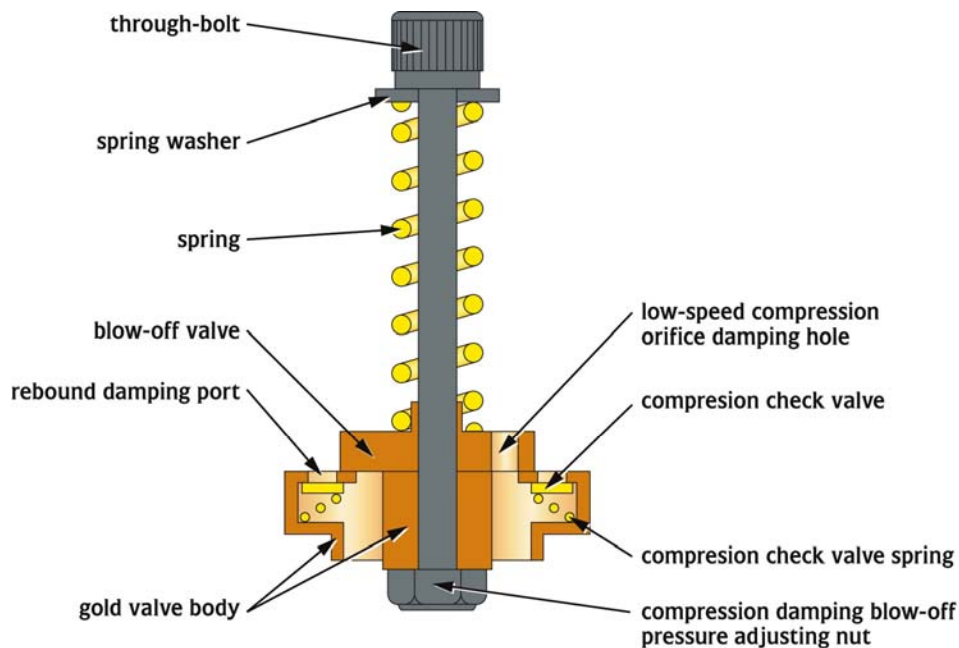
VARIABLE	SETUP	OPTIONAL	PRIMARY EFFECT
Valve Spring Preload*		0 - 7 Turns	Overall firmness, controlling a mushy feel and the speed the front end dives under braking. 2 - 4 Turns initial setting is standard. 1 -5 turns usable range
Valve Spring Rate		#26 Silver #40 Blue #64 Yellow #101 Red	Overall firmness and the ride on square shaped bumps. 40lb/in spring at 2-4 turns OR 64lb/in spring at 2-3 turns are typical starting points
Emulator Valve Plate Bleed Holes		1 – 4 Bleeds: Drill dimples as needed	Initial fork movement low speed damping & plushness before valve plate opens; small bumps, chatter, etc.
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.
Oil Level		100-180mm	Sets Final Firmness in the last 25% of Fork Travel
Fork Spring Rate		.38 – 1.2kg	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 adjust PVC/Metal spacer length as needed.*
- Oil Level controls bottoming along with fork stiffness in the last 25-30% 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 25-30% 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!'***



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