

# RACE TECH

1501 Pomona Rd, Corona, CA 92880 • 951.279.6655 • fax 951.279.7171 • www.racetech.com

## EMULATOR and DAMPING ROD INSTALLATION – KLX/DRZ 110

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2 pgs

**TOOLS REQUIRED** – 8 mm Allen Socket, air impact, tape measure (metric/inch), tubing cutter, and US-2 (10w) or US-3 (15w) Fork Fluid.

- 1 Remove the damping rods.** Take the forks off the bike and disassemble them. An air impact and a long Allen socket helps a lot. For stubborn Damping Rod Allen bolts use a drift and beat on the head of the damping rod bolt to jar the threads loose. Unless you are doing a complete overhaul, on most models, you don't have to remove the seals. Simply take the fork spring and the damping rod bolt out, turn the fork upside down and the damping rod will fall out.
- 2 Check the Emulator Valving.** The standard pre-installed valving is a 101 lb/in Emulator Valve Spring with 3 turns of Valve Spring Preload.
- 3 Begin reassembling** the forks according to your manual. Remove the stock piston rings from the damping rods and place them on the new damping rods. Replace the stock damping rod with the new one. Remember to install the top-out spring and bottom-out cone. Consult manufacturers specs for damping rod bolt torque.
- 4 Set the fork spring preload by making the correct length spacers.** This is done before installing the fork fluid.

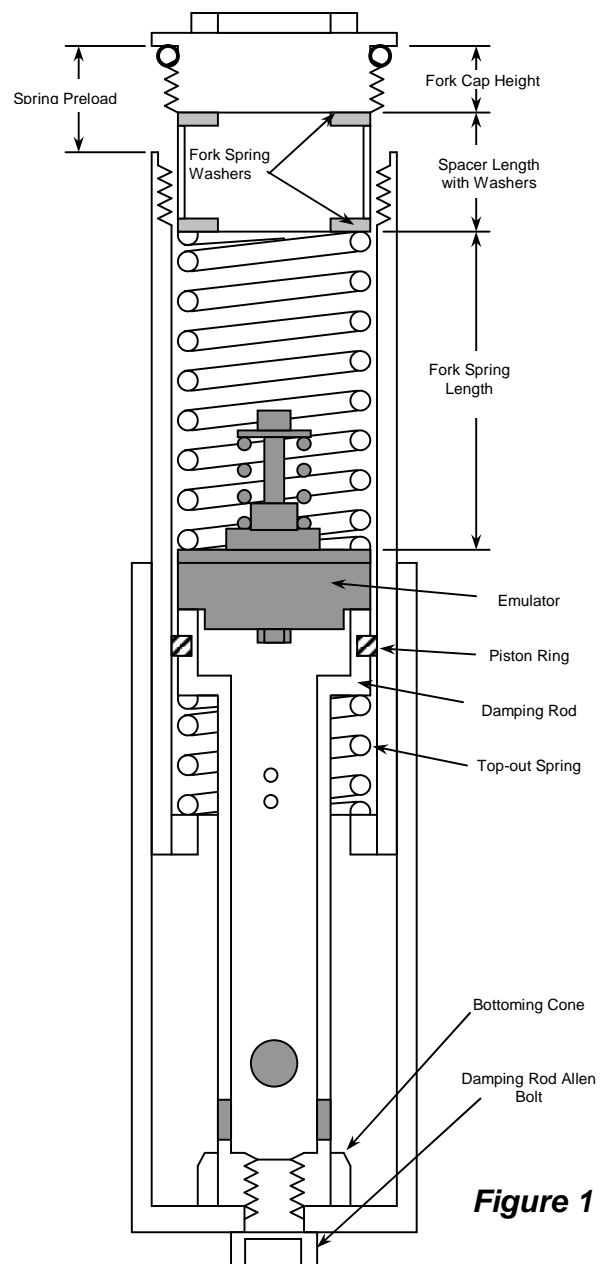
- Drop the Emulator down the tube. It sits on top of the damping rod with the Emulator Valve Spring facing up and is held in place with the main fork spring. Refer to figure 1. Visually check to make sure the Emulator is sitting squarely on top of the damping rod.
- Extend the fork tube all the way. Insert the fork springs into the fork tube on top of the Emulator. Install a fork spring spacer washer. Place the fork spring spacer tube in next, then another washer.
- Set the fork cap on the washer and determine the preload by measuring from the top of the fork tube to the sealing lip on the fork cap (see figure 1). This is a direct measurement of fork spring preload. Shorten the spring spacer tube to achieve the proper preload.

**We recommend 10 mm (0.4") of total spring preload.**

NOTE: You must have washers on both ends of the spacer.

The spacer must not rest directly on the spring or the cap.

- 5 Install the fork fluid.** Remove the fork spring and install the fork fluid. Bleed the fork by pumping them. Install the Emulator and **set the oil level to 110 mm (4.3")** with the forks completely bottomed and the springs out.



**Figure 1**

6 **Finish reassembly** by installing the spring and spacer. Before you install the cap, re-check the spring preload. This will indicate whether the Emulator is seated properly. Install the fork caps and, with the forks off the bike, push on them, checking for any unusual drag or bind that would indicate an improperly seated Emulator. Install the forks back on the bike. **Align the forks on the axle for minimum bind.** Tighten all the bolts and enjoy!

## TUNING NOTES

- To adjust the Emulators you must remove them from the forks.
- When removing 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 makes the forks stiffer.
- Before installation, be sure the jam nut on the Emulator is tight.

<b>RIDER WEIGHT</b>	<b>FORK SPRING PRELOAD</b>	<b>OIL</b>	<b>OIL LEVEL</b>	<b>VALVE SPRING RATE</b>	<b>VALVE SPRING PRELOAD</b>
Up to 120 lbs	10 mm (0.4")	US-2	110 mm (4.3")	64 lb/in	3 – 4 Turns *
121-160	10 mm (0.4")	US-2	110 mm (4.3")	64 lb/in	3 – 4 Turns *
161 and Over	10 mm (0.4")	US-3	110 mm (4.3")	101 lb/in	3 – 4 Turns *

## TUNING VARIABLES

<b>VARIABLE</b>	<b>STANDARD</b>	<b>OPTIONAL</b>	<b>PRIMARY EFFECT</b>
Valve Spring Preload *	3 Turns *	0 to 7 Turns *	Overall firmness, controlling a mushy feel and the speed the front end dives under braking
Oil Viscosity	US-2 or US-3	US-1 (5) to 20wt	Use oil viscosity to set rebound, this affects traction and stability
Valve Spring Rate	101 lbs/in	26, 40 or 64 lbs/in	Overall firmness and the ride on square shaped bumps

\* 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.

**Please call Race Tech Technical Support 951.279.6655 with questions.**