

# RACE TECH

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## HIGH PERFORMANCE ATV RACE SERIES FRONT RACE SPRING KIT LTR450

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3 pages

INCLUDES qty 2 of each: Main Springs, Secondary Springs, NPL Spring, NPL Collar, STD Go-Between, Step-Cut Go-Between, Crossover Rings and Lower Spring Retaining Collar.

TOOLS REQUIRED: Service Manual, Vise with Soft Jaws TMVJ 065 or equivalent, TSPA 01 Preload Adjusting Tool or Spanner Wrench, ¼" Flat Blade Screwdriver, File, TSSM 01 Sag Master or Calipers and Hydraulic Spring Compressor.

DIGITAL VALVING SEARCH (DVS) printout: See DVS at [www.racetech.com](http://www.racetech.com) for your custom spring setup specs.

**Support the front of the ATV securely; remove front shocks per the procedure in your service manual. Install the Race Tech Spring Kit as follows:**

<h3>Stock Spring Removal</h3> <ol style="list-style-type: none"><li>1. Clamp Shock into a vise with Soft Jaws.</li><li>2. Loosen Lock Ring.</li><li>3. Remove all spring preload using a Spanner Tool or by loosening the Collar by hand.</li><li>4. Clean and lube the threads.</li></ol>		
<h3>Remove the Retaining Collar</h3> <ol style="list-style-type: none"><li>1. Use a small Screwdriver or similar tool. Find the opening in the plastic Dust Shield and gently pry the Bottom-out Bumper away from the end of the Shock approximately 50mm (2").</li><li>2. Compress the Spring slightly by hand and remove the Retaining Collar being careful not to pinch your fingers!</li><li>3. Remove the stock Spring and Dust Shield.</li></ol>		
<h3>NPL Collar and Spring Installation</h3> <ol style="list-style-type: none"><li>1. Install the NPL Collar (single flange) with the long end of the flange facing towards the bottom of the Shock (upward on picture #1).</li><li>2. Install the NPL Spring over the NPL Collar. The NPL Spring is the softest of the three springs.</li><li>3. Install the Step-Cut Go-Between Collar. The Collar has a step on the inside diameter. The larger diameter must go towards the threaded portion of the shock body for proper clearance.</li></ol>	 <p>NPL Collar</p>	 <p>Step-Cut Go-Between</p>

## Tuning Options and Middle Spring Installation

1. A stacked spring can provide a progressive spring rate. When the Go-Between flanges touch, the spring rate gets stiffer. It is possible to decrease this distance using Crossover Rings. Two sizes of crossover rings are provided,  $\frac{1}{8}$ " and  $\frac{1}{4}$ ". This allows for a  $\frac{1}{2}$ " adjustment range in  $\frac{1}{8}$ " increments.
  2. Once you have received the specs for your application install the center spring and proper Crossover Rings (if recommended).
- **No Crossover Ring** (Photo 1) - **(Softest setting)**. The arrow shows the largest distance between the two flanges.
  - **$\frac{1}{8}$ " Crossover Ring** (Photo 2) - install just the  $\frac{1}{8}$ " Crossover Ring.
  - **$\frac{1}{4}$ " Crossover Ring** (no Photo) - install just the  $\frac{1}{4}$ " Crossover Ring.
  - **$\frac{3}{8}$ " Crossover Ring** (Photo 3) - install both the  $\frac{1}{4}$ " and  $\frac{1}{8}$ " Crossover Rings together.
  - **$\frac{1}{2}$ " Crossover Ring** (Photo 4) - **(Stiffest setting)** remove both rings and flip the Standard Go-Between so that the long flange extends into the center spring.

Refer to the DVS Specs at [www.racetech.com](http://www.racetech.com) to get the recommended Crossover distance for your application.



1) No Crossover Ring



2)  $\frac{1}{8}$ " Crossover Ring



3)  $\frac{3}{8}$ " Crossover Ring



4)  $\frac{1}{2}$ " Flipped Go-Between

## Main Spring Installation

Race Tech Spring Kits for the LTR450 stock front shocks include a "deep drop" style Lower Spring Retaining Collar. This requires the spring set to be compressed approximately 1.5" (37mm) for installation.

A Hydraulic Spring Compressor should be used to safely install the Retaining Collar. Many suspension shops have this type of Spring Compressor. If you are unable to find someone in your area, contact Race Tech for details about purchasing a Hydraulic Spring Compressor. You can also send your shock into Race Tech and we will be happy to install your Spring Kit for you.

1. After the Center Spring, install the Main Spring and Lower Spring Retaining Collar using a Hydraulic Spring Compressor.



## NPL Gap Setup

1. Refer to the DVS Specs from racetech.com.
2. Adjust the Preload Collar to set the Gap between the flanges of the NPL and Go-Between Collars. Use a Caliper or Tape Measure.

**NPL Gap** is the distance between the NPL Collar Flange and the Go-Between Collar Flange that extends into the NPL Spring.

*This distance determines the ride height of the ATV. A larger Gap creates a lower Ride Height; a smaller gap equals a higher Ride Height.*



## Tighten the Lock Ring

1. Gently tighten the Lock Ring against the Preload Collar being careful not to change the Gap.
2. Repeat procedure for the second shock.



***If you need assistance please contact Race Tech Tech Support at 951.279.6655***