

Cogent Dynamics Inc. DDC Fork Kit Instructions (DR650SE 1996-Current)

Dear Valued Customer,

Thank you for purchasing your Cogent Dynamics Drop in Damper Cartridge (DDC). This easy to install damping solution will update your DR650 forks to new levels of performance. Each Cogent DDC kit has been engineered to enhance the performance of your bike. The Cogent Dynamics DDC modification will improve both compression and rebound damping characteristics of the DR650 forks, providing outstanding feel and traction.

These instructions assume familiarity with damper rod type fork internals and the necessary technical tools and ability. Installation of your new DDC requires that your forks are in good condition and have the proper type and level of fork oil. Your Cogent DDC was calibrated with Spectro Cartridge Fork Fluid 85/150 (5 wt.) which is a synthetic blend suspension fluid made in the USA for cartridge type forks. (You may use any equivalent 5 wt. fork fluid.) An approximate volume of 600 ML per fork leg will be needed to fill the tube to the correct level. We also recommend that you incorporate the appropriate straight rate springs for your application (Installation of the DDC set without the Cogent springs may require altering the OEM spacer length or use of a new spacer of appropriate length). No drilling, welding or other modifications are needed to complete the installation.

Spring recommendations for the Cogent Dynamics DDC

Riders weight	Spring rate	Preload	Oil Level
150-190 lbs	0.52 Kg/mm	8mm	130mm
190-240 lbs	0.58 Kg/mm	8mm	130mm
240-290 lbs	0.63 Kg/mm	8mm	130mm

Installation Procedure: *(We highly recommend you perform a 'dry run' to familiarize yourself with the installation procedure before you complete the install with oil.)*

1. Elevate motorcycle and remove front wheel.
2. Loosen top triple clamp bolts.
3. Loosen fork caps while fork tubes are still held by the lower triple clamp.
4. Remove forks from motorcycle.
5. Remove fork cap, preload spacers, washer and main spring from each tube.
6. Remove fork oil by inverting fork over a suitable container and pump forks until no more oil is in the fork. Let fork stand upside down for 15 minutes to thoroughly drain all oil.
7. Add new fork oil (5 wt.) and bleed fork by slowly the pumping the fork tube up and down until air bubbles quit coming up.
8. Ensure oil level is set by fully compressing fork and measuring from the top edge of the steel fork tube to the oil level (this measurement is 130mm in most cases).
9. Carefully lower the DDC into the fork, orienting the smaller O.D. locating ring and nylock nut downward. Ensure that the DDC is fully seated into the damper rod head.
10. Install spring with the OEM washer at the top. Install the OEM spacer or cut a spacer if you are not using a Cogent spring to provide correct spring preload (8mm in most cases).

11. Extend the fork and measure from the top of the spacer to the top edge of the fork tube. A measurement of approximately 7-10mm assures that the DDC is seated and the correct length spacer is installed. (This assumes you are using a Cogent approved spring and are not compressing the top out spring).
12. Install fork cap and reinstall forks into your bike.
13. Install front wheel. Always cycle the front suspension up and down a few times while holding bike stationary with the front brake before tightening the axle pinch bolts. This will assist in aligning front suspension and assure front brake operation.
14. Ride and enjoy!

Special notes regarding custom tuning parameters:

The DDC unit has been carefully tested and calibrated to provide a complete engineered performance ride. Should you wish to make adjustments, all three of the below tuning factors will revise the overall fork performance.

1. Main spring rates, spring preload and oil height will be the most common factors to adjust to suit special needs. The recommended spring rates from Cogent Dynamics are considered a mid-range standard and some customers may choose to make alternate selections/adjustments.
2. Spring preload effects the front fork sag and the normal range of preload will be between 4mm – 15mm. Front sag should be near 30% of available fork travel. Stock travel for the DR is 259mm at full travel and 220mm in the low seat position.
3. The recommended 130mm oil height gives a good mid-range air column in the forks with an excellent progressive feel for most dual-sport riding. Less air column (higher oil level) will add bottoming resistance and provide a firmer ride feel. A lower level will provide a more linear wheel rate and a plusher ride. Acceptable range of oil level is 150-115mm.

Some customers may find that they have differing preferences and choose to experiment with variations of damping settings. The DDC system allows for wide latitude of adjustability (“re-valving”) where differing damping levels are desired.

Should you wish to revise the valving in your DDC, kits are available through Cogent Dynamics. Available options include: plush ride shim spindles, compression shim stack and a rebound spring kit. A full DDC tuning kit including all three of those items is available as the Pro-Tune Kit. Call for pricing and availability.

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