Center Differential Instructions (Forward-Only)

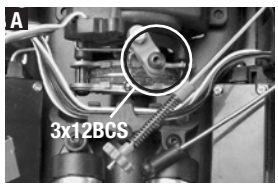
Covers Parts #5414, 5414X

Note 1: The center differential for the Traxxas Revo works as a forward-only system, and is a direct replacement for the Revo Forward-Only Kit (#5394X). For transmissions that already have the Revo Forward-Only Kit installed, the shaft and gear will be the only components removed from the transmission. Replace the forward-only output shaft and gear assembly with the center differential shaft and gear assembly using the instructions below as a reference.

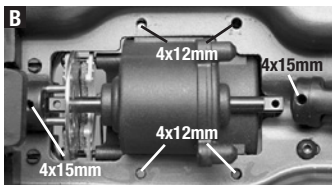
Note 2: The long rear output shaft of the assembled center differential is designed to fit the 30mm longer Revo 3.3 chassis. You may experience a slight amount of interference with the rear output yoke when used with the standard chassis. Material can be removed to remedy this, or the rear output shaft can be replaced with a shorter shaft (#5416).

Removing the transmission

- Remove the brake linkage from the brake arm by loosening the 3x12BCS (button-head cap screw). See image A. Disconnect the reverse linkage from the reverse shift spring.



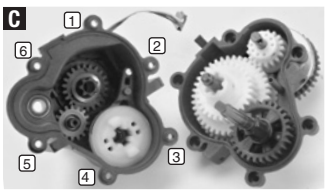
- Raise the cover on the right radio box and remove the blue sensor plug from the OptiDrive™ module.
- Disconnect the transmission skid plate from the bottom of the chassis by removing the four 4x12BCS (image B).



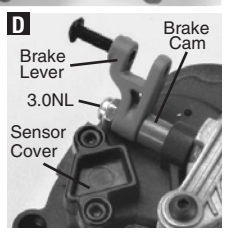
- Remove the two 4x15mm screw pins (image B) that secure the front and rear transmission yokes to the transmission output shaft. Remove both of the transmission yokes from the output shaft, leaving the driveshafts connected to the differentials. Lift the transmission out of the chassis.

Replacing the forward/reverse gears with the forward-only components

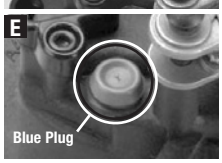
- Remove the six 3x12CCS (countersunk cap screws) from the transmission case, and carefully separate the two gearbox halves (image C).



- Remove the OptiDrive sensor from the gearbox half and replace the sensor with the included cover (image D). Use the same two 2.5x6CS (cap screws).



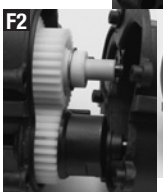
- Remove the 3.0NL (nylon locknut) and the brake lever from the brake cam to access the shift fork spring. Remove the shift fork spring from the brake cam and reinstall the brake lever and 3.0NL back onto the brake cam. **Note**: The shift spring and sensor will not be reused.



- Slide the shift fork with the drive dog carrier out of the gearbox half, and plug the shift fork hole with the included blue plug (image E). (**Note**: The black shift shaft seal is glued to the gearbox half from the factory. The plug can be inserted into the gearbox with or without the seal installed.) Remove the reverse idler gear and the plastic gear support. Remove the forward and reverse output gears, output shaft, and drive dog carrier, along with all four PTFE washers (PTW) located on the output shaft. Remove the forward and reverse primary gears (#5396) from the primary shaft, and replace them with the forward-only primary gear. Secure the gear onto the shaft using the supplied 2.0mm pin and the C-clip (See image F1 and F2 for correct orientation).

Components removed from the transmission

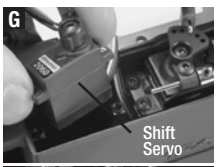
- Slide one PTFE washer over the rear output shaft, and then install the center differential assembly into the rear gearbox half, carefully joining the two gearbox halves together (see images F1 and F2 for correct orientation). Remember to insert the brake disc between the brake calipers before joining the two gearbox halves. The output shaft (exiting the front) must go through the center of the brake disc (located between the brake calipers). Fasten the halves together with six 3x12CCS.



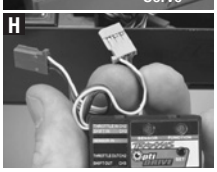
Assembled transmission

Removing the electronics from the chassis

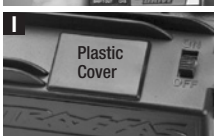
- Unhook the air filter from the electronics box, and remove the cover to access the shift servo. Remove the shift servo from the radio box (see image G) and unplug the servo from the OptiDrive module. Set the servo aside, it will not be reused. Reinstall the cover on the electronics box, and place the air filter back into the retainer.



- Unplug the throttle servo from the OptiDrive module. Unplug the OptiDrive module from channels 2 and 3 on the receiver (2 plugs = 1 gray and 1 green). See image H. Plug the throttle servo into the CH2 port on the receiver.



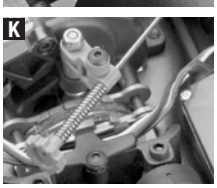
- Reinstall the cover onto the right side radio box and snap the small plastic cover (included) into the hole where the OptiDrive module was located (see image I).



Reinstall the transmission

- Set the transmission back onto the chassis and slide the front and rear output yokes back onto the output shafts of the tranny. The torque pins on the front output yoke should key into the slots stamped into the disc. Secure the yokes with the two 4x15mm screw pins (see image J).

- Secure the transmission and the transmission skid plate to the chassis with the four 4x12BCS.
- Reconnect the brake linkage to the brake arm and secure it with the 3x12BCS. This completes the procedure (see image K).



Driving and set-up tips

- The center differential allows the power from the engine to be transferred to the front and rear differentials independently from one another. When the rear wheels are under more load than the front wheels, more power will be transmitted to the front wheels. This is very beneficial on rough terrain and makes hard acceleration from low speeds easier to control by keeping the nose down.
- The center differential is assembled with 100K wt. differential lube from the factory. This viscosity will be a good base point for most conditions. Thinner fluid will transfer power easier than thicker fluid. Try thinner fluid on extremely rough and slick surfaces, and thicker fluid on very smooth and high-bite surfaces.
- Using the center differential will also affect braking performance. Because there is not a solid shaft connecting the front and rear differentials, the brake system located on the front of the transmission housing will only be effective for the front wheels. This may cause a slight push while entering a corner. Installing the Revo Rear Brake Kit (#5417) will restore rear braking power, and the ability to adjust front and rear brake bias. This kit is recommended for maximum performance.

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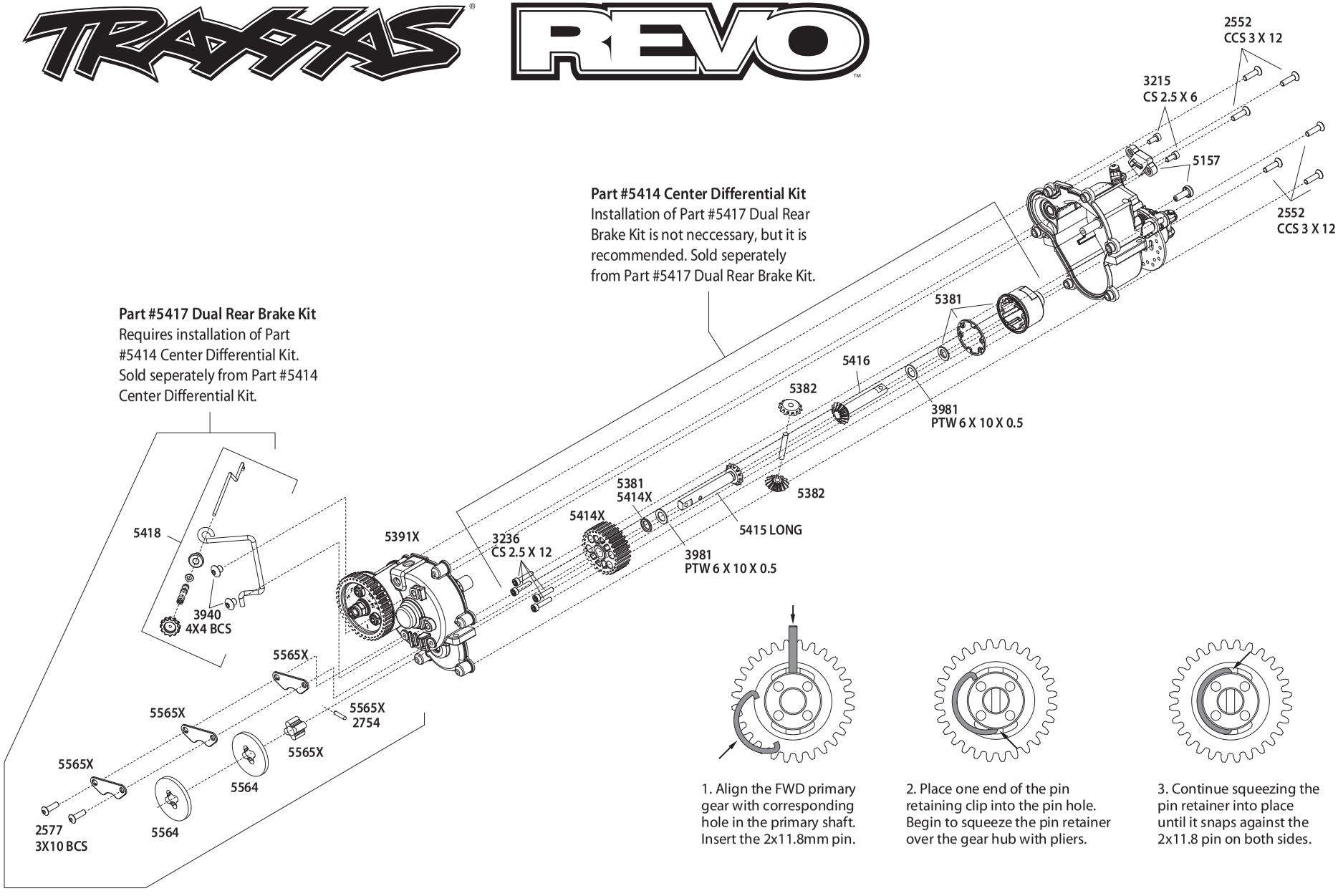
Part #5414 Center Differential Kit
Installation of Part #5417 Dual Rear Brake Kit is not neccessary, but it is recommended. Sold seperately from Part #5417 Dual Rear Brake Kit.

Part #5417 Dual Rear Brake Kit
Requires installation of Part #5414 Center Differential Kit. Sold seperately from Part #5414 Center Differential Kit.



1. Align the FWD primary gear with corresponding hole in the primary shaft. Insert the 2x11.8mm pin.

2. Place one end of the pin retaining clip into the pin hole. Begin to squeeze the pin retainer over the gear hub with pliers.

3. Continue squeezing the pin retainer into place until it snaps against the 2x11.8 pin on both sides.