




Actuator Replacement Instructions

1.) Raise the truck utilizing a jack and jack stands. (this step is optional but we found it much easier to complete the job with the truck on stands and wheels removed.)

Remove passenger side wheel/tire	Remove passenger side wheel liner	Remove coolant cap
		

2.) Remove/loosen coolant standpipe vent (the coolant vent plug is sticking straight up on the passenger side of the valve cover.)



3.) Drain coolant. This can be reached from the driver side after removing the wheel & wheel liner. I found that by removing the driver side wheel & wheel liner it made it very easy to access the drain. You can also remove the lower radiator connection and drain it that way as well.

4.) Appropriate Allen key will aid in loosening the drain valve. Turn counter clockwise then pull outwards to drain, this will not pull out all the way. Be sure to take note that this plug only turns partially. Do not forcefully try to turn it further once it stops.



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6.) Make sure that it drains completely to keep from spilling any coolant on the new actuator when you go to install it.

7.) Unplug and remove the actuator from the truck. There should be 4 retainers that are holding the actuator in place.



8.) Once the actuator is removed, clean the surface of where the old actuator was mounted.

9.) Be sure to check the turbo gear that was under the actuator. It should be able to be moved 'full travel' by hand. (full travel should be about 1 inch). We then suggest slamming the veins against each stop. This is done to make sure that when the veins are pushed to the extreme ends of their travel, they do not stick. If the actuator lever cannot be moved easily by hand or resistance is found when slammed at either end of its fullest travel, the turbo must be replaced. When you check the actuator lever, you are doing this step when 'cold'. This allows time for the metal to contract which could then give the false reading of the arm moving freely. **DO NOT** use the arm moving freely as a sign that your turbocharger is healthy and in good shape. There can be soot build up within the veins that may only stick when the turbocharger is at operating temperature that CAN cause a new actuator to fail. This happens when the turbocharger actuator lever gets stuck and the actuator tries to power through it. If this happens, the actuator WILL NOT be covered under warranty.



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10.) Remove the 4 retainers that hold both actuator halves together. *For 07.5-12 year models – you will need to separate the two halves and reuse the gear housing of the old actuator. Some of these may have tamper proof torx. For the 07.5-12 trucks, you need to make sure you get any water out of the gear housing before mounting the new actuator half to the old gear housing. If you get coolant in the actuator half for any reason you **WILL VOID** the warranty.

11.) Moving on to the two city diesel actuator halves, be sure to place the O-ring style gaskets into their designated places evenly and carefully to not damage them.



12.) Mount both halves together making sure to place the green gasket in between them in the proper orientation. Do not over tighten the retainers. Once they are tightened by hand evenly, it is now time to torque them. **TORQUE VALUE IS ONLY 25 IN-LBS.**



13.) After properly torquing the two halves together, make sure before you install both halves onto the truck that you plug in the actuator, hold it in hand and have someone turn the ignition to the run position. You should now see the actuator move one direction then stop and go the other direction. This movement should be smooth. What you are looking for is any excessive binding. If you do not see the actuator move at all, stop, turn off the ignition, unplug the actuator and call for assistance. If everything looks to be moving freely and normal then move onto the next step.

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14.) Now you are ready to mount the actuator to the truck. Be sure the mounting surface is dry and clean of any old gasket material or debris. Verify that the mounting surface of the actuator housing does not have any recessed grooves that would not allow the gaskets to seal off the coolant. **IF ANY MOISTURE GETS INTO THE ACTUATOR THE WARRANTY WILL BE VOIDED! DO NOT GREASE THE ACTUATOR GEARS!**

15.) You will use 4 retainers to mount the new actuator onto the truck. Make sure the actuator is sitting flush before tightening. The position of the actuator does not matter as this is a self-calibrating unit. It will calibrate itself.

16.) The actuator plug/wires are long so be sure to put a loop in itself if needed. We use zip ties to keep the wires/plug away from the hot side of the turbo/exhaust.



17.) Now is a good time to cycle the ignition key a few times and you should hear your actuator operating as it should. Once you confirm this you can now reinstall everything in reverse order.

18.) When adding coolant, you may need to burp the system a couple of times to get it completely filled.

19.) Once you install everything back in reverse order, take it for a drive and let us know how you like it! Let us know how much you enjoyed not having to spend thousands on a new turbo!

If you would like to be featured on our social media, take pictures of the installed product & send to the email below.

If you have any questions at all please don't hesitate to contact us.

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