

# 2016+ NISSAN TITAN XD 5.0L CUMMINS INTERCOOLER PARTS LIST AND INSTALLATION GUIDE



## PARTS INCLUDED

- 1PC | MISHIMOTO INTERCOOLER
- 2PC | SILICONE BOOTS WITH DURACORE™ TECHNOLOGY
- 4PC | CONSTANT-TENSION T-BOLT CLAMPS
- 2PC | ALUMINUM SPACERS
- MOUNTING HARDWARE

## TOOLS NEEDED

- |                         |                           |
|-------------------------|---------------------------|
| 8MM SOCKET              | PRYBAR OR FAN CLUTCH TOOL |
| 10MM SOCKET             | 19MM WRENCH               |
| 1/4" DRIVE RATCHET      | FLATHEAD SCREWDRIVER      |
| 1/4" EXTENSIONS         | PANEL TOOL                |
| 12MM SOCKET             | SMALL PICK                |
| 13MM SOCKET             | LINEMAN PLIERS            |
| 14MM SOCKET             | NEEDLENOSE PLIERS         |
| 3/8" DRIVE RATCHET      | DIAGONAL CUTTERS          |
| 8MM ALLEN KEY/SOCKET    | HOSE PINCH-OFF PLIERS     |
| LARGE ADJUSTABLE WRENCH | HOSE CLAMP TOOL           |

**INSTALL TIME** 2 HOURS

**INSTALL DIFFICULTY**     

## DISCLAIMER

- Raise vehicle only on jack stands or on a vehicle lift.
- Allow vehicle to cool completely prior to attempting installation.
- Do not run the engine or drive the vehicle while overheating; serious damage can occur.
- Please dispose of any liquids properly.
- Mishimoto is not responsible for any vehicle damage or personal injury due to installation errors, misuse, or removal of Mishimoto products.
- Mishimoto suggests that a trained professional install all Mishimoto products.

## CAUTION

Never work on the cooling system when it is hot. The coolant temperature in the radiator can be considerably higher than boiling, and the system may be under pressure. Opening a cooling system that is hot or under pressure can result in serious injury. Always wait until the system has cooled completely before servicing it in any way.

## NOTE

The radiator and intercooler on this truck are both quite large and unwieldy. It is a good idea to have a friend on hand to assist with the removal and installation of these heavy components.

## INSTALL PROCEDURE

01. Set the vehicle on an automotive lift or raise it with a jack and place it securely on jack stands. Refer to your owner's manual for safe lifting points if you are unsure.
02. Loosen the three bolts that secure the skid plate to the front crossmember, and remove the four Allen bolts that secure the plate to the frame. Then slide the plate toward the driver side and remove it from the vehicle. (4x 8mm Allen bolts)



03. Remove the four tree clips that secure the air diversion panel to the underside of the fan shroud. (4x tree clips)



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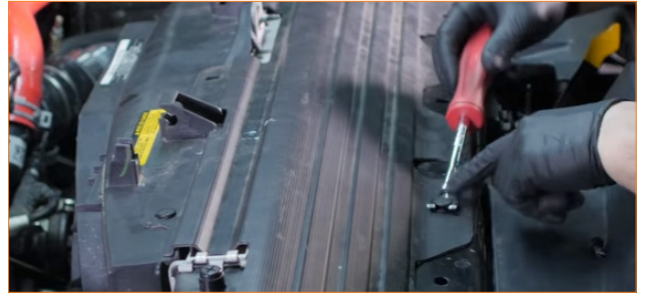
04. Locate the petcock on the passenger side of the radiator and open it to drain the coolant



05. Remove the pressure cap from the radiator to accelerate the draining process.
06. Compress the clamp that secures the overflow hose to the radiator and disconnect the hose. Then separate the overflow hose from the three clips that secure it to the fan shroud, and move the hose out of the way. (1x spring clamp)
07. Remove the two bolts that secure the water neck to the radiator, and then separate the water neck from the radiator. (2x 8mm bolts)



08. Remove the eight pop clips that secure the cover to the radiator support and fan shroud. Then remove the cover from the vehicle. (8x pop clips)



09. Separate the transmission cooler lines from the clips that secure them to the fan shroud.



10. Remove the five bolts that secure the fan shroud to the radiator. (5x 8mm bolts)



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11. Separate the electrical harness from the fan clutch. To release this connector, lift up on the gray locking tab and then depress the black tab.



12. Remove the bolt that secures the fan clutch harness to the retainer and then remove the retainer. (1x 10mm bolt)



13. Use a fan clutch tool to hold the crankshaft pulley, and break the engine fan loose from the pulley with a large adjustable wrench. If you don't have access to a fan clutch tool, simply insert a long prybar into one of the holes on the pulley to hold it.



14. Loosen the fan by hand to remove it from the crankshaft drive pulley.
15. Now lift the fan shroud and engine fan upward together, and remove them from the engine bay.
16. Compress the clamp that secures the lower radiator hose to the radiator. Then separate the hose from the radiator. (1x spring clamp)
17. Place an oil drain bucket under the passenger-side end of the radiator and use a line clamp to pinch off the upper transmission cooler line. Compress the clamp that secures this line to the radiator, and then separate the line from the radiator. (1x spring clamp)



18. Now repeat this process on the lower transmission cooler line. (1x spring clamp)

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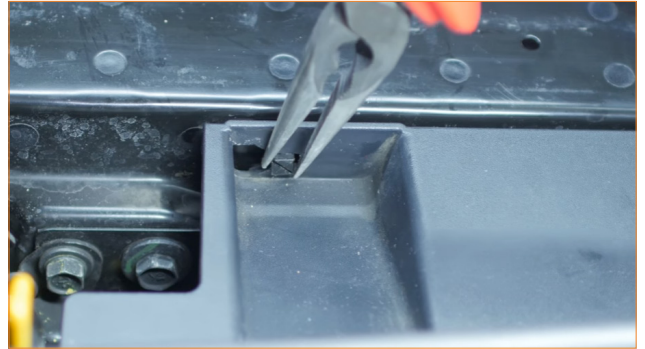
19. Remove the two bolts that secure the radiator to the radiator support. (2x 13mm bolts)



20. Loosen the two clamps that secure the cold-side intercooler pipe to the intake and the intercooler. Then remove the cold-side intercooler pipe. (2x 11mm T-bolt clamps)



21. Loosen the two clamps that secure the hot-side intercooler pipe to the turbo outlet and the intercooler. Then remove the hot-side intercooler pipe. (2x 11mm T-bolt clamps)
22. Take note of the arms at the base of the radiator. These must clear the end tanks on the intercooler during removal. Now remove the radiator from the vehicle. This radiator is quite large, so it's a good idea to have a friend on hand to help.
23. Release the six clips that secure the top edge of the grille to the radiator support. Use pliers or a screwdriver to twist the square head of the clip until it slips into the slot in the grille. (6x grille clips)



24. Look through the grille to locate the clips that secure the sides of the grille to the radiator support. Insert a screwdriver through the grille and turn the clips to release them. Repeat this process on the other side. There are two clips on each edge. (4x grille clips)
25. Tilt the top of the grille away from the vehicle, and look along the bottom edge to locate the tabs that secure this edge. Lift up on the tabs to release the grille, and then remove it from the vehicle.



26. Remove the ten grille clips from the vehicle and transfer them to the grille for reinstallation. To remove the clips, squeeze the tabs together and extract the clip from the radiator support. To install the clips on the bumper, slip the head of the clip through the slot in the bumper, and twist the clip to seat the tabs into the channel on the back side of the bumper. (10x grille clips)

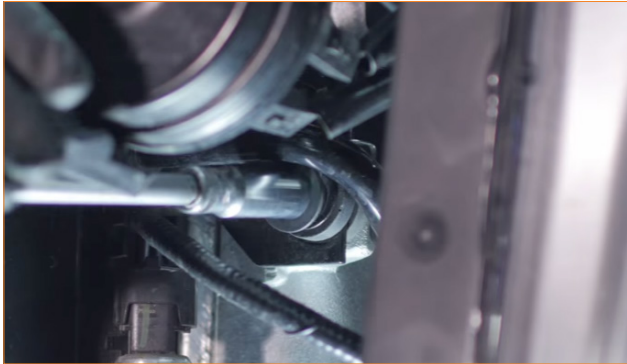
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27. Remove the four bolts that secure the AC condenser to the intercooler. (4x 10mm bolts)



28. Remove the two bolts that secure the intercooler to the radiator support. (2x 14mm bolts)



29. Remove the intercooler by lifting it directly upward.
30. Remove the two rubber isolators from the bottom of the stock intercooler. Then remove the two upper bushings. Push the collar out of the bushings, and then remove the bushings. Note that the side of the bushing with a flat washer attached faces toward the front of the vehicle. (2x rubber isolators, 2x upper mounting bushings)



31. Transfer the upper mounting bushings and rubber isolators to the Mishimoto intercooler.
32. An unsupported AC condenser can make it difficult to install the intercooler. To make it easy, support the AC condenser with a few zip ties. Lead a zip tie under the mounting bracket on the driver side of the intercooler, and wrap it around the radiator support. Hold the AC condenser in place while you tighten the zip tie. Now repeat this process on the passenger side.



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33. Install the Mishimoto Intercooler. Lower the intercooler into place so the mounting pegs engage the frame. Then tilt the top of the intercooler toward the front of the vehicle, and install the two bolts that secure the intercooler to the radiator support. (2x 14mm bolts)
34. Cut and remove the zip ties that were supporting the AC condenser, and install the four bolts that secure it to the intercooler. (4x 10mm bolts)
35. Reinstall the grille. Align the tabs on the bottom edge of the grille with the slots in the bumper cover, and slide the grille into place. Working from bottom to top, push the grille in until all the clips are engaged.
36. Locate the intercooler boots included with your kit. Remove the intercooler boot from the cold-side pipe. This is a crimped connection that must be cut to remove the boot. Slip one of the provided T-bolt clamps over the smaller end of the new intercooler boot and install it to the pipe. Repeat this process on the hot-side intercooler pipe. (2x T-bolt clamps)
37. Reinstall the radiator. Lower the radiator into place so the mounting pegs engage the frame. Locate the spacers included with your kit. If you are reinstalling the stock radiator, place these spacers between the upper mounting bushings of the radiator and the radiator support, and then install the two bolts that secure the radiator. If you are installing a Mishimoto



38. Reattach the transmission cooler lines to the clips integrated into the radiator.
39. Reconnect the lower transmission cooler line to the radiator and secure it with the original spring clamp. (1x spring clamp)
40. Reconnect the lower radiator hose and secure it with the original spring clamp. (1x spring clamp)
41. Lower the fan shroud part-way into the engine bay, and slide the engine fan under the top of the shroud. Then thread the engine fan onto the crankshaft drive pulley. Spin the fan on by hand until the clutch begins to slip.
42. Now lower the fan shroud into place. There are two tabs on the top of the fan shroud that slip over the rear edge of the radiator to locate it properly.
43. Reconnect the upper transmission cooler line and secure it with the original spring clamp. (1x spring clamp)
44. Reinstall the five bolts that secure the fan shroud to the radiator. Thread in all the bolts by hand, and then go back to tighten them. (5x 10mm bolts)
45. Hold the crankshaft pulley with a fan clutch tool or prybar, and then tighten the fan onto the pulley with a large adjustable wrench.
46. Reinstall the retainer for the fan clutch harness and secure it with the original bolt. Then reconnect the electrical harness and lock the connector. (1x 10mm bolt)
47. Secure the upper transmission cooler line to the fan shroud with the integrated clips.
48. Install the upper transmission cooler line to the radiator and secure it with the spring clamp. (1x spring clamp)
49. Reinstall the water neck to the radiator and secure it with

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the two bolts. (2x 8mm bolts)

50. Clip the metal portion of the bypass hose into the fan shroud. Reinstall the overflow hose to the nipple on the water neck and secure it with the original clamp. (1x spring clamp)
51. Reinstall the hot-side intercooler pipe. Lower the pipe into place and install it over the turbocharger outlet first, and then to the intercooler inlet. Now secure the pipe with the two clamps. (2x T-bolt clamps)
52. Install the cold-side intercooler pipe. Lower the pipe into place and attach it to the intake first, and then to the intercooler. Secure the pipe with the two T-bolt clamps. (2x T-bolt clamps)
53. Reinstall the cover over the radiator support and secure it with eight pop clips. (8x pop clips)
54. Secure the transmission cooler lines to the bottom of the fan shroud with the integrated clips.
55. Install the four pop clips that secure the air diversion panel to the bottom of the fan shroud. (4x pop clips)
56. Reinstall the skid plate and secure it with the four Allen bolts.

Then tighten the three bolts that secure it to the crossmember. (4x 8mm Allen bolts)

57. Fill the cooling system with premixed, Nissan-approved coolant through the reservoir filler neck. Unscrew the bleeder valve on the top of the radiator as you are filling until coolant flows from the screw to release the air from the top of the radiator. Start the engine, and allow it to idle with the cap off. Turn the heater control valve on the vehicle's HVAC unit to full hot, and put the fan on low. Monitor the engine temperature and coolant level in the reservoir. Add coolant as needed to maintain proper level in the reservoir, and check your connections for leaks. If the vehicle begins to overheat or coolant starts to overflow from the reservoir, shut off the engine and allow it to cool before continuing. Once the vehicle is fully warmed up and the coolant level has stabilized, allow the vehicle to cool off completely, and then top off the coolant level. Coolant level should be checked once more after putting in some miles.

**Congrats! You just finished installing the 2016+ Nissan Titan XD 5.0L Cummins Intercooler.**



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