WOODWARD

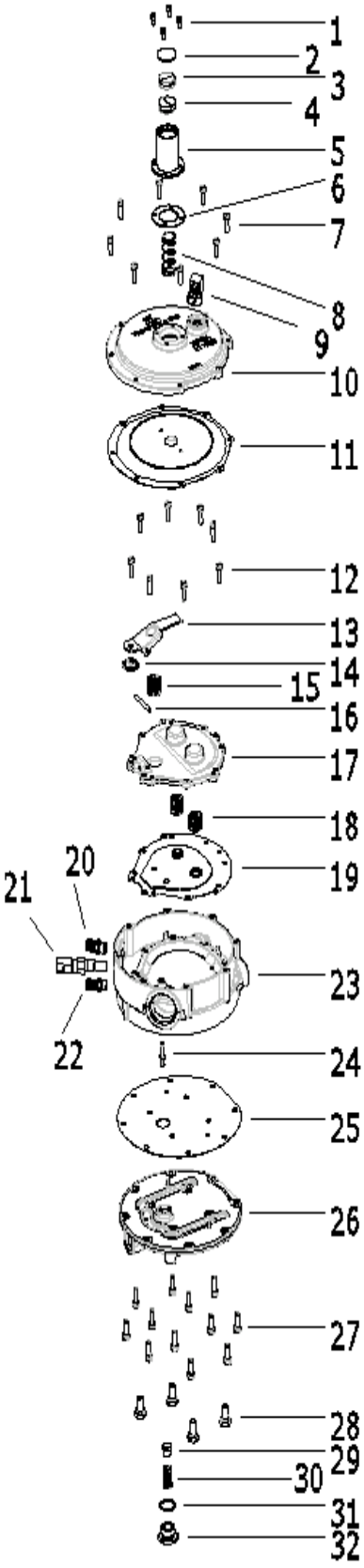
Application Note 51282
(Revision NEW, 7/2006)

Original Instructions

5233-1005-RK N-H420 Turbo Regulator Repair Kit

Installation Instructions

5233-1005-RK N-H420 Turbo Regulator Repair Kit



Installation Instructions

1. Remove the eight secondary cover screws (7).
2. Remove the secondary cover assembly (10) and pressure adjustment spring (8).
3. Remove and discard the secondary diaphragm assembly (11) by sliding it toward the coolant ports and off of the secondary lever.
4. Remove the eight primary diaphragm cover screws (12) and primary diaphragm cover assembly (17). Remove and discard the secondary valve seat (14).
5. Remove and discard the primary diaphragm (19) by carefully peeling the diaphragm off the five alignment posts and sliding the primary diaphragm assembly toward the coolant ports, unhooking it from the primary valve pin (24). Retain the two primary springs (18).
6. Turn the regulator over and remove the hex head inlet plug (32). Discard the inlet plug O-ring (31).
7. Remove and discard the primary valve (29). Retain the primary valve spring (30).
8. Remove the twelve heat exchanger cover screws (27) and heat exchanger cover assembly (26). Remove and discard the heat exchanger gasket (25).
9. Remove and retain the primary valve pin (24) from the regulator body.
10. Clean the metal components by first draining and wiping off as much accumulated oil and heavy-ends (wax-like deposits) as possible with a dry cloth, then using alcohol to remove remaining deposits.

IMPORTANT

Petroleum-based solvents such as kerosene or diesel fuel should not be used to clean regulator components, as any remaining residue will dissolve in LPG fuel and could possibly foul an oxygen sensor.

Do not attempt to remove the secondary lever from the primary diaphragm cover assembly, as the secondary lever pivot pin is press-fit into the cover. After cleaning, verify the secondary lever turns freely on the pivot pin. Take care not to damage regulator body sealing surfaces while disassembled. Blow-off components with compressed air after cleaning to evaporate residual alcohol.

11. Push the primary valve spring (30) over the conical end of the new primary valve (29) and install the primary valve spring and primary valve seat into the heat exchanger cover (26).
12. Install the inlet plug O-ring (31) into the pocket of the heat exchanger cover.
13. Install the inlet plug (32) into the heat exchanger cover and torque to 135–145 lb-in (15.3–16.4 N·m).
14. Apply compressed air at 100 psi (690 kPa) to the inlet port on the heat exchanger cover assembly. Use leak detector or soap and water solution to check for leaks at the primary seat to verify it is seating correctly.
15. Insert the primary valve pin (24) into the hole in the regulator body, then turn the regulator body over and install the primary diaphragm assembly (19) by hooking the end of the primary valve pin on the diaphragm plate, then push the diaphragm assembly down over the five locating posts on the on the regulator body. Gently pull on the primary valve pin from the opposite side to verify it is still hooked on the primary diaphragm assembly.
16. Place the two primary springs (18) over the primary diaphragm assembly (19).

17. Place the primary diaphragm cover assembly (17) with new secondary valve seat (14) over the primary diaphragm assembly (19). The primary springs (18) should be inside the spring pockets on the primary diaphragm cover assembly.
18. Secure the primary diaphragm cover assembly (17) to the body with eight cover screws (12). Torque the screws in a crossing pattern to 15–18 lb-in (1.7–2.0 N·m).
19. Install the heat exchanger cover gasket (25) on to the heat exchanger cover assembly (26) by pushing the gasket over the primary jet housing.
20. Install the heat exchanger cover assembly (26) on the regulator body (23). Secure the heat exchanger cover assembly to the regulator body with twelve cover screws (27). Torque the screws in a crossing pattern to 25–30 lb-in (2.8–3.4 N·m).
21. Install the secondary diaphragm assembly (11) by inserting the end of the secondary lever into the tab on the secondary diaphragm plate.
22. Place the pressure adjustment spring (8) on the center nub of the secondary diaphragm assembly (11), and place the secondary diaphragm cover assembly (10) over the spring and secondary diaphragm assembly and onto the regulator body. The pressure adjustment spring should be inside the spring adjustment tower. Secure the secondary diaphragm cover assembly to the regulator body with eight cover screws (7). Torque the screws in a crossing pattern to 15–18 lb-in (1.7–2.0 N·m). Visually check that the edge of the secondary diaphragm assembly is continuous all around the regulator body and that all cover screws are installed properly through the tabs on the diaphragm. Visually check that the end of the secondary lever is still hooked through the tab on the secondary diaphragm plate by looking in the regulator outlet port.
23. After install, start the engine and check for leaks with leak detector or soap and water solution around the heat exchanger cover screws, all around the heat exchanger gasket, around the secondary cover screws and all around the edge of secondary diaphragm.

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