



**WARNING: THE FUEL SYSTEM IS UNDER CONSTANT HIGH PRESSURE EVEN WITH THE ENGINE OFF. UNTIL THE PRESSURE HAS BEEN RELEASED, DO NOT ATTEMPT TO OPEN THE FUEL SYSTEM. DO NOT SMOKE OR USE OPEN FLAMES WHILE SERVICING THE FUEL SYSTEM. WEAR PROTECTIVE CLOTHING AND EYE PROTECTION. ENSURE WORK IS COMPLETED IN A WELL-VENTILATED AREA AND FREE OF FLAME / SPARKS.**

### Recommendations:

1. Always install the supercharger decoupler per vehicle manufacturer's guidelines.
2. Perform the fuel system pressure release procedure: a. Remove fuel pump relay from PDC (rear PDC, cavity #72). b. Start and run engine until it stalls; attempt to restart engine until it will no longer run. c. Turn ignition off and reinstall fuel pump relay to PDC.
3. Install a memory saver in vehicle and then disconnect the negative battery terminal. This will save radio station presets as well as computer settings.

### Supercharger Nose Removal

4. Remove the cowl cover panel (Note: windshield wiper arms need to be removed first).
5. Remove the engine covers on either side of the supercharger.
6. Remove the air cleaner body (see Fig 1): a. Loosen the air inlet tube retaining clamp at throttle body (Fig 1: ①). b. Disconnect the makeup air sensor wire harness connector. c. Disconnect makeup air hose and remove the makeup air sensor from the air inlet duct (Fig 1: ②). d. Disconnect the MAF sensor (Fig 1: ③). e. Remove the air cleaner housing retaining bolt (Fig 1: ⑤).
- f. While lifting, slide air duct off the throttle body (Note: it may be necessary to remove the air inlet tube clamp to remove the duct → Fig 1: ④).
7. Take note of the under-hood belt routing diagram. If missing, refer to Figures 2 & 3.
  - a. Remove the main accessory belt (Fig 2) and the supercharger belt (Fig 3).
  - b. Discard the old supercharger belt.
8. Disconnect the fuel purge hose from the supercharger nose and supercharger (Fig 4: ① & ②).
9. Disconnect the wire harness connector from the intermediate TMAP sensor (driver side, towards rear of supercharger) → Fig 5.
10. Remove PCV hose from passenger side of the supercharger nose (Fig 6).
11. Disconnect the throttle body wire harness connector at the supercharger nose and disconnect the booster vacuum supply hose (under supercharger nose).
12. Disconnect the bank 1 (Fig 7: ①), throttle output TMAP sensor (Fig 7: ②), and bypass valve wire harness connectors (Fig 7: ③).
13. Disconnect the wire harness connector from the bank two TMAP sensor (Fig 8).
14. Disconnect the fuel injector connectors from both sides of the supercharger.
15. Remove the four throttle body screws and remove the throttle body from the inlet nose. a. Remove and discard the throttle body inlet seal.
16. Remove ten 10mm hex head bolts from supercharger cover (Fig 9 – start at #10 and work backwards to #1).
17. Remove the sixteen short bolts and five long bolts from the supercharger cover (T30) → Fig 12.
18. Remove the supercharger lid using the tab at the rear of the supercharger. Discard the lid gasket. a. Note: the six cooler retention seals must remain with the lid.
  - b. Remove and discard the three lid tower O-ring seals from the supercharger.
19. Remove the three bypass throttle body adapter screws (T30) and remove the adapter. Inspect seals for damage and discard if necessary.
20. Remove the TMAP sensor from the inlet nose and discard the fastener.
21. Tilt the front edge of the supercharger up and support with rubber or wooden blocks.

Note: the lifting operation will require the help of an assistant. Take care to avoid pinching. Take care to avoid damaging the supercharger to cylinder head intake gaskets during this operation.
22. Remove the six screws from around the inlet nose and discard. Remove the inlet nose and discard the gasket. 23. Run an M6 tap about ¼" into the supercharger bushings. Pull outward to remove them and discard (Fig 10).
24. Remove all non-OE brackets and belt-wrap pulley kits. Substitutions can negatively affect system performance. Failure to follow this step could result in premature wear of the Y performance decoupler.

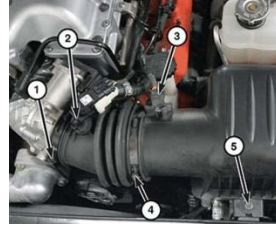


Figure 1: Stock Air Box

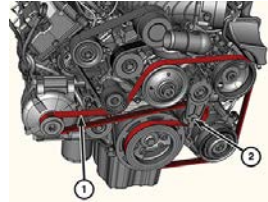


Figure 2: Accessory Belt

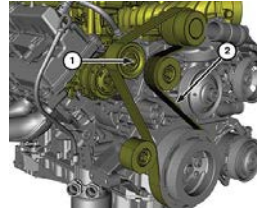


Figure 3: Supercharger Belt

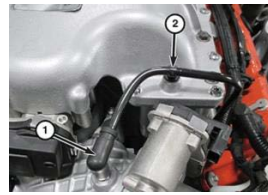


Figure 4: Purge Hose



Figure 5: TMAP



Figure 6: PCV Hose



Figure 7: Connectors



Figure 8: TMAP



Figure 9: Supercharger Cover



Figure 10: Bushings

### Stock Decoupler Removal

25. Remove the rubber cap on the stock supercharger decoupler. Puncture the centre of the cap to pry off. Discard the old cap.
26. Support the pins on the back of the supercharger shaft. Use Metco tool MET-HPT2000.
27. Once supported, remove the supercharger pulley using a 24mm hex tool (Metco MET-HPT1000). Rotate decoupler shaft in a counter-clockwise direction while holding the supercharger shaft stationary.
28. Inspect supercharger threads and ensure they are clean and in good condition.

### Y performance Install

29. Take care when handling the decoupler. Never rest the decoupler on the front face (marking side) as this can shift the internals. Avoid impacting anywhere on the decoupler when handling or during installation. Do not disassemble the decoupler.
30. Thread Y performance decoupler on by hand until it contacts the supercharger front bearing. Install the Y performance decoupler using the 17mm hex tool and supporting the pins on the rear of the supercharger shaft. **Torque spec = 80 Nm ± 10 Nm (or 59 ft.lbf ± 7 ft.lbf). Do not use an impact gun or air tool to install the decoupler.**
31. Use a feeler gauge to check the gap between the rear of the decoupler pulley and the supercharger nose. If the gap is less than 2mm, remove the decoupler and reinstall with the provided washer between the decoupler and the supercharger bearing. If no washer was provided, use McMaster-Carr 97022A549. Repeat step 30.
32. Gently press the new rubber seal cap on the front of the decoupler by hand (do not use a mallet or other device). Ensure it is fully seated in the groove all the way around.

### Supercharger Nose Re-Install

33. Press the new bushings into the supercharger (Fig 10). A plastic or rubber mallet can be gently used. **DO NOT CONTACT THE ALUMINUM INLET BEARING HOUSING.**
34. Use a new inlet nose gasket and install the inlet nose to the supercharger. **Torque spec = 35 Nm (26 ft.lbf).** Use sequence:
  - i. Lower centre
  - ii. Upper centre
  - iii. Upper left
  - iv. Lower left
  - v. Lower right
  - vi. Upper right
35. Reinstall the bypass adapter using a new gasket if damage was found on the original. **Torque spec = 10 Nm (7 ft.lbf).** a. Lubricate the upper internal diameter using clean engine oil.
36. Install the three new tower lid O-rings to the supercharger.
37. Lubricate the inlet nose TMAP sensor O-ring with clean engine oil. Install and tighten new fastener. **Torque spec = 6 Nm (53 in.lbf).**
38. Install new lid gasket into the supercharger.
39. Ensure the six cooler retention seals are still assembled in lid (Fig 11).
40. Align lid and press about the bypass throttle body into the cuff.
41. Tighten the twenty-one T30 bolts to **10 Nm (7 ft.lbf).** Use sequence in Fig 12.

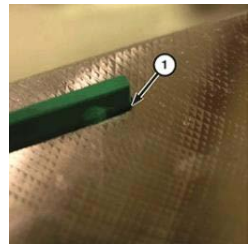


Figure 11: Cooler Retention Seals

- Once done, tighten bolts #1 – #5 again to **10 Nm (7 ft.lbf).**
42. Using a new seal, install throttle body onto inlet nose and torque four bolts to **10 Nm (7 ft.lbf).**
  43. Remove the supports from under the front of the supercharger.
  44. Tighten the ten supercharger bolts using the pattern in Fig 9 (start at #1). a. Tighten all bolts in sequence to **5 Nm (4 ft.lbf).**

- b. Then repeat sequence and tighten to **15 Nm (11 ft.lbf).**
- c. Repeat the sequence one more time and tighten to **30 Nm (22 ft.lbf).**

45. Reinstall all removed components and connectors in reverse order (Step 14 → Step 8).
46. Install the supercharger belt. Note belt routing in Fig 3. Ensure the new belt is used that was included with the Yperformance decoupler kit (alternate belts – Kevlar, aramid, etc. – are not compatible).

### Check and ensure that belt ribs are properly seated in all the pulley grooves.

47. Install the main accessory belt. Note belt routing in Fig 2. **Check and ensure that belt ribs are properly seated in all the pulley grooves.**

48. Install engine covers.
49. Install the air body cleaner (Step 6: f → a).

- a. Fig 1: ④ torque spec = **4 Nm (35 in.lbf)**
- b. Fig 1: ⑤ torque spec = **4 Nm (35 in.lbf)**
- c. Fig 1: ① torque spec = **4 Nm (35 in.lbf)**

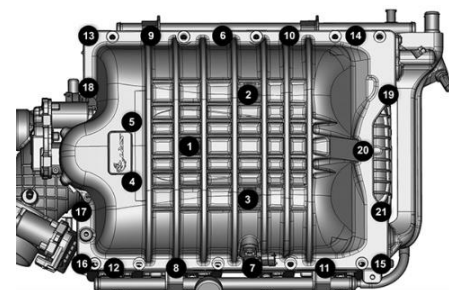


Figure 12: Supercharger Bolt Pattern

50. Install the cowl cover panel.
51. Reconnect the battery and remove the memory saver.
52. Check that the belt travel area is clear and then start the engine to confirm serpentine belt operation.
53. Stop engine and again check that all the belt ribs are in the pulley grooves.
54. Appropriate updates to ECU tuning and hardware are required.

### WARNING:

**DO NOT DISASSEMBLE THE DECOUPLER!** Always allow engine to cool down prior to performing any repair work.

For safety, always disconnect negative battery terminal and wear appropriate safety equipment before performing any work under the hood. When disconnecting the negative battery terminal do not allow wrench to contact the positive terminal.