

2.5L TJ Supercharger install instructions

Preinstall

- 1) Tuning
 - a) Tuning is required when using a pulley smaller than 3.00".
 - b) An AFR gauge is recommended when tuning fuel map.
- 2) Fuel
 - a) Be sure to run highest octane available at the pump! This is critical for a forced-induction vehicle. If most of the tank is full of lower octane fuel, postpone install until filled up with high octane fuel.
- 3) Tools needed
 - a) Normal hand tools: Flat head screwdriver, 10, 12, 13, and 15mm sockets to remove the throttle body and power steering bolts.
 - b) Fuel line disconnect tool to remove the connector on fuel line
 - c) A 15mm wrench and socket to remove the belt on 1997 to 1999 Jeeps with the sliding tensioner. On 2000+, a 3/8" square male ratchet to unload the dynamic tensioner.
 - d) All the Boosted Technologies parts use stainless Allen head socket cap screws. You will need 4 and 5mm sockets. 'T'-handles are nice.
 - e) Rags to clean gasket surfaces, tape to cover intake manifold inlet from dropped parts.
 - f) Safety glasses to keep fuel out of your eyes when you disconnect the fuel line. It is under 50 PSI!

Stock Removal

	Figure 1: Stock engine bay before install
1. Disconnect positive terminal on battery and cover with non-conductive material	
2. Keep track of removed components and keep all parts (bolts, washers, hoses, etc.) with respective parts <ol style="list-style-type: none">2.1. Plastic zip top bags with part descriptions work very well for small parts2.2. Keeping components like the power steering bracket and attached bolts and washers separate will ensure parts are not miss matched or misplaced	
3. Remove air intake tube and fresh air vent tube (Figure 2)	Figure 2: Stock air box top, filter and fresh air vent tube.

4. Remove throttle cable bracket.
- 4.1. Disconnect throttle cables from throttle body (Figure 3)

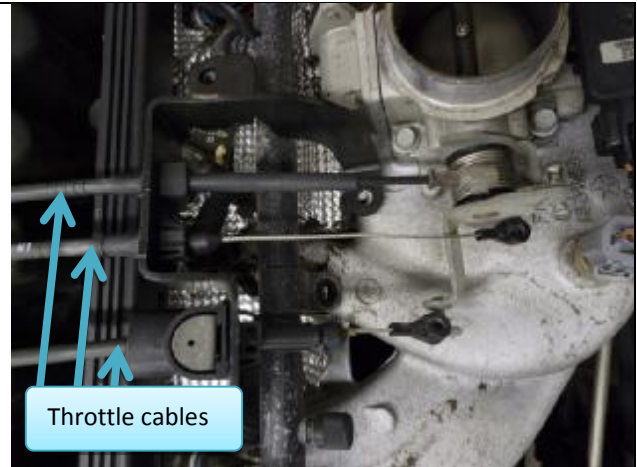


Figure 3: Throttle cables in bracket and disconnected from throttle body.

- 4.2. Remove cables from bracket
- 4.2.1. Release cables with pliers pressed on each tab on cable clips
- 4.2.2. Wiggle cable clips till cables is freed
- 4.3. Bracket after removal (Figure 4)



Figure 4: Throttle cable bracket.

- 4.4. Lay throttle cables out of the way on the passenger side of engine bay like in Figure 5

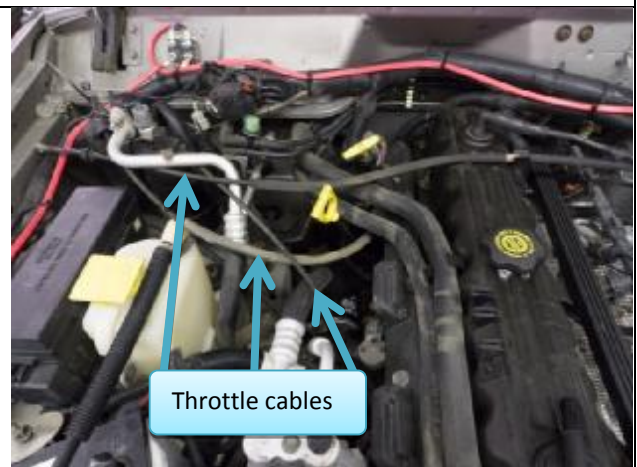


Figure 5: Throttle cables lying over passenger side of engine bay.

5. Remove stock serpentine belt
 - 5.1. Use socket to loosen belt tensioner before removal
 - 5.2. Note routing of belt prior to removal
 - 5.3. Remove belt



Figure 6: Front of engine after serpentine belt removal.

6. Remove power steering bracket.
 - 6.1. Remove three bolts holding power steering pump (Figure 7)
 - 6.2. Remove four bolts securing bracket to engine

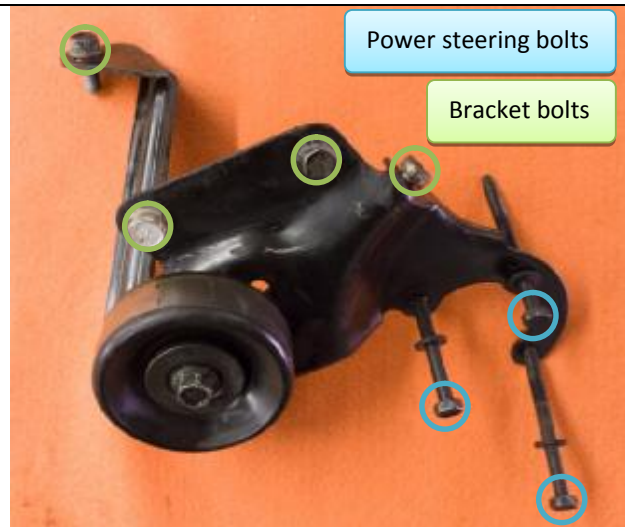


Figure 7: Stock power steering bracket.

- 6.2.1. Lay pump in fender well (Figure 8)



Figure 8: Power steering pump in fender well.

6.3. After removal engine should look similar to Figure 9



Figure 9: After power steering pump and bracket removal.

7. Remove throttle body.

- 7.1. Disconnect three wire connections on throttle body before removing show in Figure 10
 - 7.1.1. Idle air control connector (IAC)
 - 7.1.2. Throttle position Sensor (TPS)
 - 7.1.3. Manifold absolute pressure (MAP)
 - 7.1.4. Use zip ties or bungee cords to hold wires out of the way
- 7.2. Disconnect vacuum line from throttle body
- 7.3. Remove MAP sensor from throttle body
 - 7.3.1. Remove two bolts from side

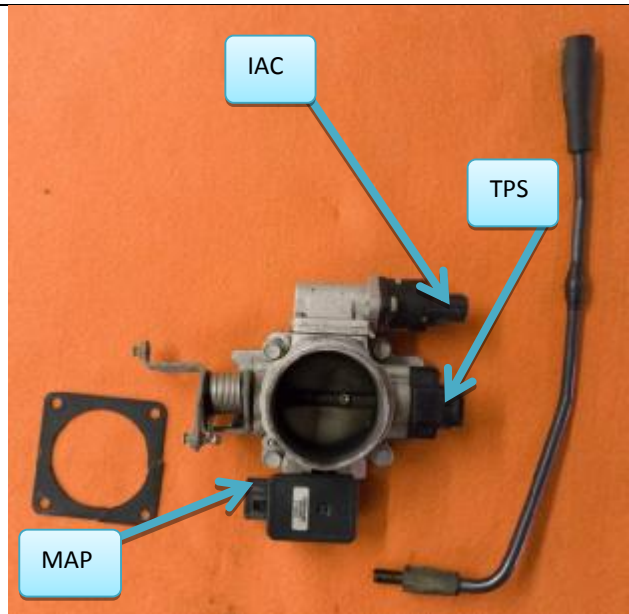


Figure 10: Throttle body and vacuum line after removal.

7.4. After removal intake manifold should look like Figure 11



Figure 11: Intake manifold after throttle body removal.

8. Disconnect vacuum hoses and lines from top and side of intake manifold
 - 8.1. All of these hoses and lines experience vacuum. Therefore all of them (except the MAP sensor) will need to be connected to ports that experience vacuum (pre-supercharger) once the supercharger is installed. The MAP sensor is installed to measure the boost pressure.
 - 8.2. Remove brake booster hose
 - 8.2.1. Largest hose connected to intake manifold
 - 8.3. Remove stock rubber ends from cruise control and heater AC lines
 - 8.3.1. Gently twist ends to release them
 - 8.3.2. Use a flat head screw driver under the ends to push off easily

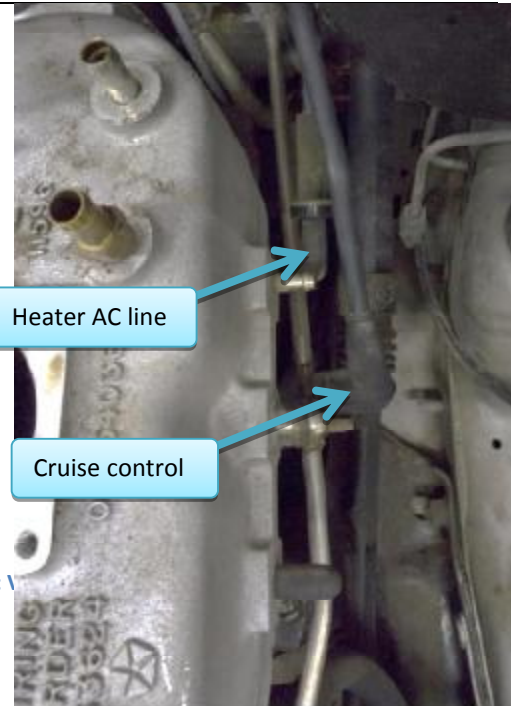


Figure 12: V

9. Disconnect fuel line from fuel rail
 - 9.1. Release fuel pressure by removing Schrader valve from port on fuel rail

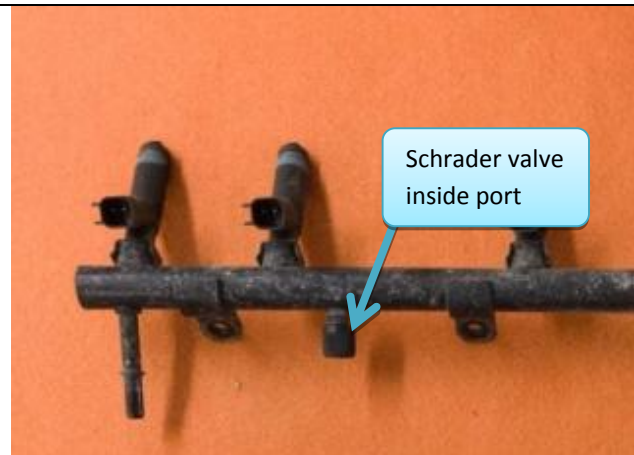


Figure 13: Fuel rail.

- 9.2. Remove stock fuel line from fuel rail
 - 9.2.1. Use a 5/16" fuel line disconnect tool to disconnect line from rail

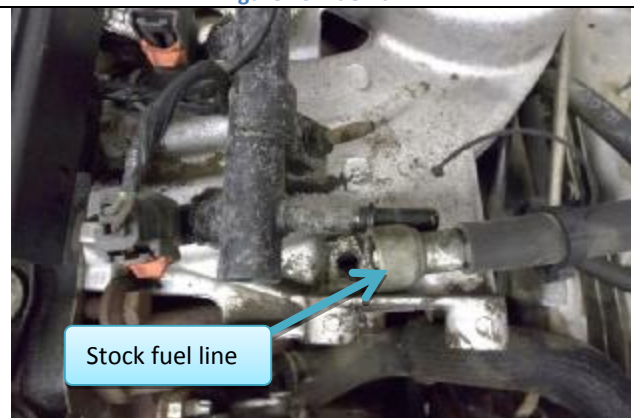


Figure 14: Fuel line disconnected from fuel rail.

10. Remove fuel rail, fuel injectors, IAT and move wire housing
- 10.1. Mark fuel injector wire connectors
- 10.1.1. Reference the connected injector
- 10.1.2. This ensure they are connected correctly during reinstallation
- 10.2. Remove four bolts/studs from rail shown in Figure 15
- 10.3. Remove IAT sensor

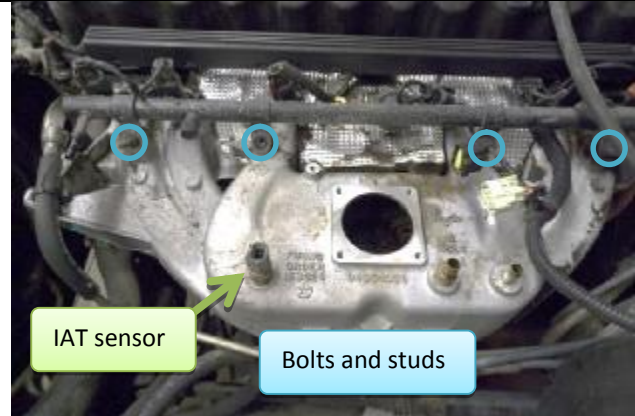


Figure 15: Fuel rail and wire housing before removal.

- 10.4. Fuel rail and injectors after removal (Figure 16)



Figure 16: Fuel rail after removal.

- 10.5. Lift off wire chase
- 10.5.1. Use a pry bar directly below chase hold-downs that slide over studs on engine
- 10.5.1.1. When pry bar is positioned correctly, only a little force is necessary
- 10.5.2. Lay chase out of the way on passenger side of valve cover (Figure 17)



Figure 17: Wire housing moved out of the way.

- 10.6. After removing fuel rail, fuel injectors and wire housing engine should look like Figure 18



Figure 18: Intake manifold after fuel rail removal, wire housing moved and heat shield in place.


<p>10.7. Remove intake manifold (Figure 19)</p> <p>10.7.1. Don't remove the bolts that hold the exhaust manifold in place if you are not changing the gasket.</p> <p>10.7.2. Remove the four bolts and washers on top and four on bottom of intake manifold</p> <p>10.7.2.1. Note where holes are located for reference when installing provided supercharger intake assembly (Figure 19)</p> <p>10.7.2.2. Clean bolts with a wire brush and spray with lubricant like WD40 since these are reused on installation</p>	<p>Figure 19: Location of intake manifold bolts.</p>
<p>10.7.3. Intake manifold after removal (Figure 20)</p>	<p>Figure 20: Intake manifold after removal.</p>
<p>10.8. Inspect manifold gasket (Figure 21)</p> <p>10.8.1. Replace if any area is damaged</p> <p>10.8.1.1. Commonly available at parts stores like NAPA</p>	<p>Figure 21: Manifold area after removal of intake manifold. Note - Manifold gasket has been cleaned.</p>
<p>11. With stock parts removed (other than power steering components) engine bay should look similar to Figure 22</p> <p>11.1. Check the condition of hoses/lines on engine</p> <p>11.1.1. Coolant hoses</p> <p>11.1.2. Vacuum hoses/lines</p> <p>11.2. Check for loose or damaged wires in engine bay</p> <p>11.3. Check water pump for leaks</p>	<p>Figure 22: Engine bay with stock items removed except power steering pump and reservoir.</p>
<p>12. Check spark plug and gaps</p> <p>12.1. Check spark plugs condition and replace if needed</p> <p>12.2. Spark plugs should be gapped at 0.030 in.</p>	

Executive summary of install

13.	Install fuel injectors and fuel rail	10
14.	Install supercharger intake manifold assembly.....	10
15.	Install power steering pump.....	12
16.	Install nose support bracket	12
17.	Install power steering hoses.....	13
18.	Install 5 th fuel injector.....	13
18.1.	Lubricate injector O-rings with a vaseline or similar lubricant.....	13
18.2.	Insert into injector port on rear of intake tube.....	13
18.3.	Slide injector adapter over top of injector	13
18.4.	Slide injector bracket and spacer over adapter	13
18.5.	Tighten bolt till tight	13
19.	Install provided fuel line extension	14
20.	Check for fuel leaks.....	14
21.	Prepare throttle body for installation	15
21.1.	Check for a protrusion below IAC valve shown in Figure 29-Figure 30.....	15
21.2.	Remove protrusion if present	15
21.2.1.	Damage to throttle body is possible if proper care is not taken.....	15
21.2.2.	Ensure only the IAC protrusion is removed and bottom surface of throttle body is untouched	15
21.2.3.	An air grinder or metal file work well.....	15
21.3.	Clean throttle body well to remove any debris from removal and carbon build up	15
22.	Install throttle body.....	16
22.1.	Install throttle body and provided gasket with four provided bolts and washers.....	16
23.	Install throttle cable bracket and cables (Figure 33).....	16
24.	Install MAP sensor	17
25.	Connect vacuum hoses.....	17
26.	Install air filter with elbow.....	18
27.	Install IAT sensor.....	18
27.1.	Attach IAT wire connector.....	18
27.2.	Attach to wire loom with zip tie in engine bay.....	18
28.	Install provided serpentine belt	19
28.1.	Route belt like stock on passenger side of engine	19

28.2.	An example of belt routing without AC is shown in Figure 39	19
28.3.	Belt routing on passenger side with AC is shown in Figure 40.....	19
28.4.	Tension belt with rotating disc	19
28.5.	Slightly loosen both bolts on disc	19
28.6.	Use a wrench on center nut to tension belt.....	19
28.7.	While holding tension on belt, tighten both bolts on disc	19
29.	Check all bolts are tight, wires are connected, hoses are connected, and all steps in instructions were completed	19
30.	Clean battery terminals, reconnect positive terminal and tighten nut.....	19
31.	Check for fuel leaks again by switching key to on for several seconds to pressurize fuel system. 19	
32.	Power steering initial operation.....	19
32.1.	Add MOPAR power steering fluid or equivalent till fluid is between both lines on outside of reservoir 19	
32.2.	Start engine and run for a few seconds, then turn off.....	20
32.3.	Check fluid level and add as necessary	20
32.4.	Repeat above steps till fluid level stops dropping.....	20
32.5.	Start engine and slowly turn steering wheel from lock to lock.....	20
32.6.	Stop engine and check fluid level again and add if necessary.....	20
32.7.	If the fluid is milky or very foamy, let vehicle stand for a few minutes, then repeat above steps 20	
32.8.	Foamy fluid can damage a pump if vehicle is run for a prolonged period.....	20
33.	All done.....	20

Supercharger installation

<p>13. Install fuel injectors and fuel rail</p> <p>13.1. Install fuel injectors</p> <p>13.1.1. Inspect injectors and O-rings for deposits or damage before installation</p> <p>13.1.1.1. Clean with brake cleaner to remove deposits</p> <p>13.1.1.2. Replace injectors if they are damaged</p> <p>13.1.1.3. Replace O-rings if brittle</p> <p>13.1.2. Apply a small amount of lubricant (Vaseline, silicone, etc.) to both O-rings on fuel injectors before installation so O-rings aren't damaged.</p> <p>13.1.3. Insert injectors into ports and rotate so connectors are angled upwardsFigure 23</p>	<p>Figure 23: Fuel injectors and fuel rail installed.</p>
<p>13.2. Install fuel rail</p> <p>13.2.1. Install fuel rail over fuel injectors</p> <p>13.2.2. Attach fuel rail with bracket to supercharger and tighten bolts</p> <p>13.2.3. Check that preassembled bolts are tight</p>	
<p>14. Install supercharger intake manifold assembly</p> <p>14.1. Two people are recommended for this step because the assembly is heavy and may be awkward for one person to hold</p> <p>14.2. Before installing</p> <p>14.2.1. Observe location of two alignment pins on manifold area and two pin holes on intake assembly</p> <p>14.2.2. Ensure each bolt has a washer on it and has been cleaned and lubricated with WD40 or similar</p> <p>14.2.3. Have two bolts with washers ready to go on once assembly is held onto manifold</p> <p>14.3. Install the assembly with one person holding the supercharger tight up against the intake manifold while the other snugly tightens two bolts with washers</p> <p>14.3.1. Ensure assembly alignment pin</p>	 <p>Figure 24: Supercharger and intake manifold assembly installed.</p>

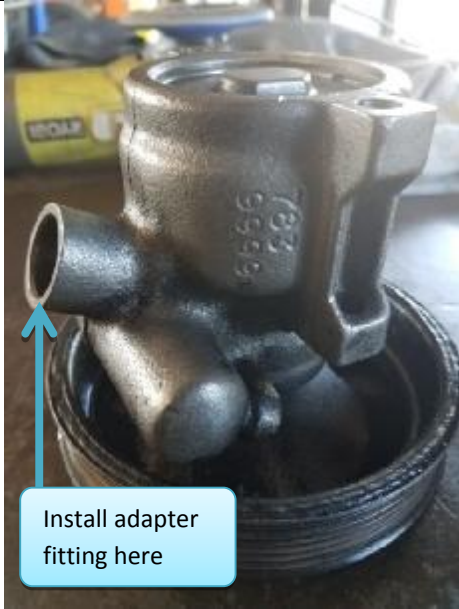
<p>holes are over alignment pins on engine before snugging up the bolts</p> <p>14.3.2. Insert the two bolts with washers into the bolt holes on the extreme front and rear of the engine</p> <p>14.3.3. Install remaining two bolts on the top of the manifold</p> <p>14.3.4. Use flexible 9/16th flex socket with a 6" extension for bolts under manifold</p> <p>14.3.4.1. A shop light placed directly under manifold area facing upwards helps with aligning bolts in holes</p> <p>14.3.5. In a crisscross pattern starting from the center, tighten each bolt up first tightly then on a second round to 24 ft. lbs. (33N-m)</p> <p>14.3.5.1. Check them a third time in a circular pattern ensuring each one is tightened</p>	
<p>15. Install provided aluminum adapter fitting in power steering pump</p> <p>15.1. Remove screw-in fitting from pump (low pressure feed line)</p> <p>15.2. Lubricate O-ring on fitting with Vaseline or other suitable lubricant</p> <p>15.3. Ensure O-ring is not damaged during install</p> <p>15.4. Use provided steel tool over top of fitting to protect it during installation</p> <p>15.5. Press in or gently hammer fitting into hole on side of pump (low pressure feed side)</p> <p>15.5.1. A dead blow hammer with a soft face will ease install</p> <p>15.6. Ensure fitting is press in all the way</p>	 <p>Install adapter fitting here</p>

Figure 25: Power steering adapter fitting install location.

16. Install power steering pump
 - 16.1. Install pump on intake assembly
 - 16.1.1. Use provided bolts and washers



Figure 26: Power steering pump and supercharger nose support installed.

17. Install nose support bracket
 - 17.1. Remove supercharger pulley and spacer
 - 17.2. Apply lubricant like vaseline on nose support O-ring
 - 17.3. Slightly loosen two nuts on back of nose support
 - 17.4. Slide nose support over supercharger nose
 - 17.5. Install and tighten two provided 3/8x1" flat head bolts on nose support
 - 17.6. Tighten nuts on back of nose support
 - 17.7. Reinstall pulley and spacer on supercharger
 - 17.8. Ensure all bolts and nuts are tight

18. Install power steering hoses

18.1. Remove stock feed hose from pump

- 18.1.1. Reservoir feed hose connected to lower port to new aluminum spigot under supercharger away from exhaust (Figure 27)

18.1.1.1. Tighten hose clamps

18.1.1.2. Tighten hose clamps

- 18.2. Torque pressure line extension (between pump and existing hose) to 21 ft. lbs. (28 N-m)



Figure 27: Power steering hoses installed and routed properly.

19. Install 5th fuel injector

- 19.1. Lubricate injector O-rings with a Vaseline or similar lubricant

- 19.2. Insert into injector port on rear of intake tube



- 19.3. Slide injector adapter over top of injector

- 19.4. Slide injector bracket and spacer over adapter

- 19.5. Apply Loctite and tighten bolt.



Figure 28: Fifth fuel injector installed on rear intake tube.

<p>20. Install provided fuel line extension</p> <ul style="list-style-type: none"> 20.1.1. Insert metal flared tube into stock fuel line fitting until it clicks 20.1.2. Slide 90° quick connect fitting over fuel rail flared fitting until it clicks 20.1.3. Install rear 5th fuel injector line with 90° fitting on fuel rail side and straight fitting on fuel injector 20.1.3.1. Ensure line cannot rub on firewall or other parts that may damage it 20.1.4. Check fittings are all the way in by trying to pull them out 20.1.5. 	 <p>Fuel line extension</p>
<p>20.2. After installation 5th fuel injector line should look similar to Figure 29</p>	 <p>Fifth injector line</p> <p>Figure 29: 5th fuel injector line properly oriented away from throttle cables.</p>
<p>21. Check for fuel leaks</p> <ul style="list-style-type: none"> 21.1. Clean battery terminals, reconnect positive terminal and tighten nut 21.2. Switching key to on for several seconds to pressurize fuel system <ul style="list-style-type: none"> 21.2.1. Do this several times 21.2.2. Do not start engine 21.3. Check for fuel smell or liquid at all fuel injectors and fuel line connections 21.4. Disconnect battery cable again 	

22. Prepare throttle body for installation

- 22.1. Check for a protrusion below IAC valve shown in Figure 30-Figure 31

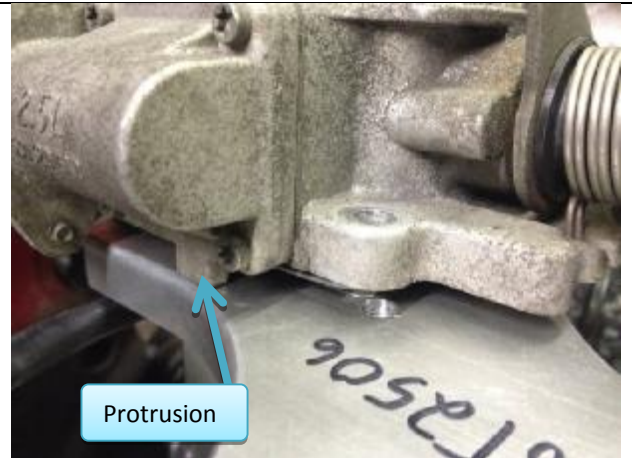


Figure 30: Throttle body raised by protrusion under IAC.

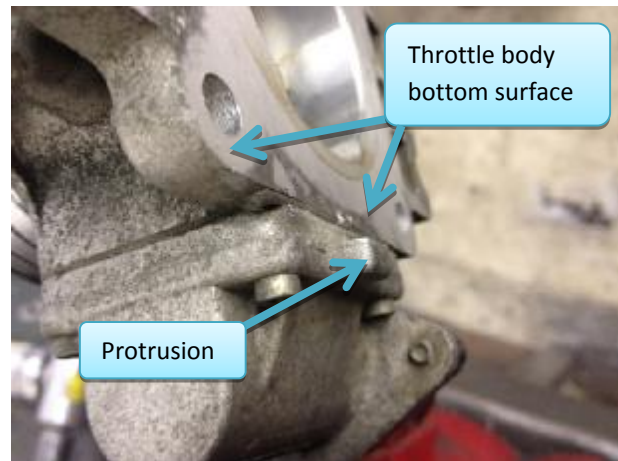


Figure 31: Protrusion from IAC under throttle body.

22.2. Remove protrusion if present

- 22.2.1. Damage to throttle body is possible if proper care is not taken
- 22.2.2. Ensure only the IAC protrusion is removed and bottom surface of throttle body is untouched
- 22.2.3. An air grinder or metal file work well
- 22.3. Clean throttle body well to remove any debris from removal and carbon build up

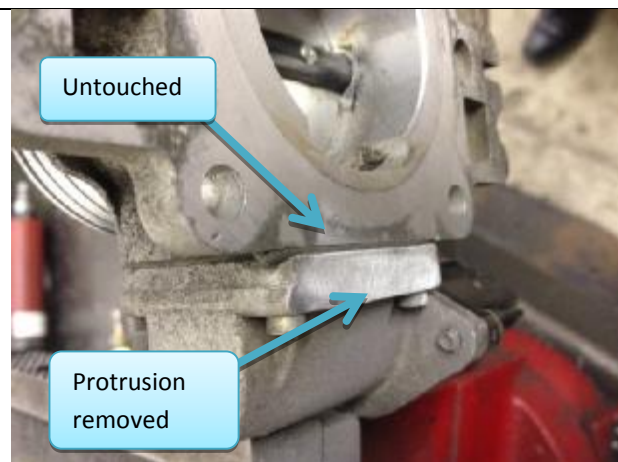


Figure 32: IAC protrusion removed without disturbing bottom of throttle body.

23. Install throttle body

- 23.1. Install throttle body and provided gasket with four provided bolts and washers



Figure 33: Throttle body sitting flush after removing protrusion.

24. Install throttle cable bracket and cables (Figure 34)

- 24.1. Top to bottom cruise control, transmission kick down and throttle cables
- 24.1.1. Cruise control and transmission kick down slide on discs
- 24.1.2. Throttle cable snaps on ball
- 24.2. Ensure all cables are routed to prevent kinks and they do not interfere with anything during operation
- 24.2.1. Observe cable area and connections for interference while engine is off by fully rotating throttle body butterfly valve
- 24.3. You may have to adjust the transmission cable for the correct shift points
- 24.4. After installation spring and bracket should look similar to Figure 34
- 24.5. Ensure full throttle is reached when depressing the gas pedal fully

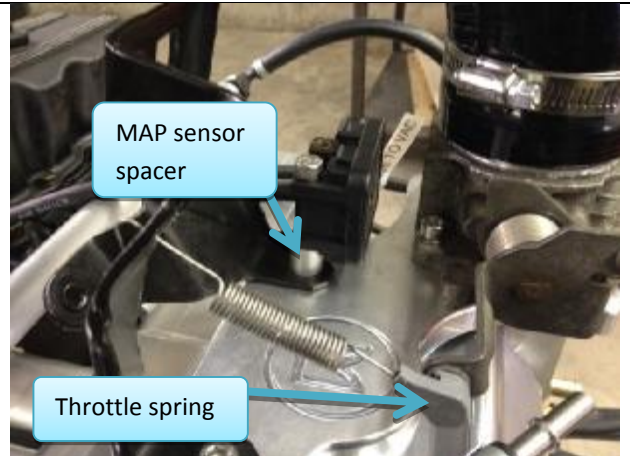


Figure 34: Throttle cable bracket installed with spring connected to throttle body.

25. Install MAP sensor

- 25.1. Attach MAP sensor to bracket with spacer (Figure 35)
- 25.2. Connect provided vacuum line to port on bottom of sensor

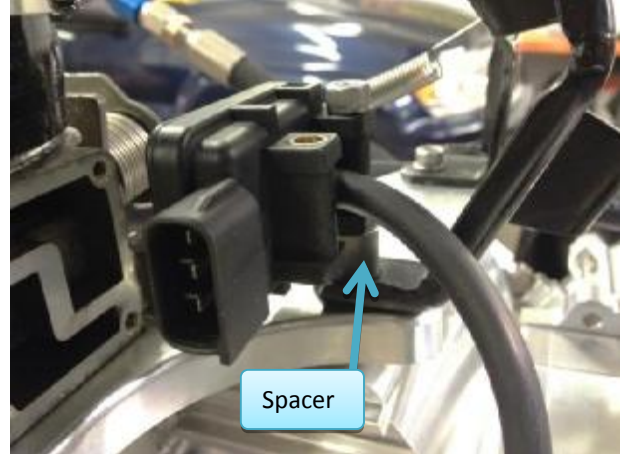


Figure 35: MAP sensor installed and properly oriented.

26. Connect vacuum hoses

- 26.1. The vacuum and boost ports are shown in Figure 36

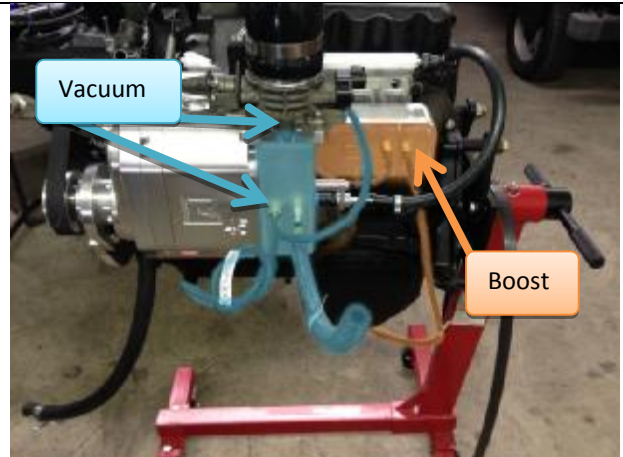
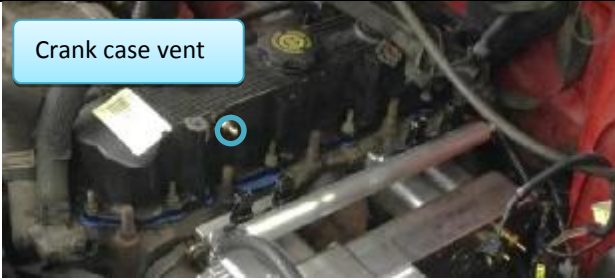



Figure 36: Color overlays of boost (orange) and vacuum (blue) sides of supercharger.

- 26.1. Connect brake booster hose (Figure 36)
 - 26.1.1. Use provided brake booster hose
 - 26.1.2. Brake booster hose connection to large connector on bottom of throttle body
 - 26.1.3. Ensure connection is good because it is difficult to see connector
 - 26.1.4. If brakes are very weak after install check this connection first

- 26.2. Connect Split Second hoses
 - 26.2.1. Use provided 5/32" vacuum line
 - 26.2.2. Connect port to boost on Split Second box to one of the 1/8" boost ports (Figure 36)

<p>26.3. Crank case vent (vents air from crank case with a vacuum)</p> <p>26.3.1. Use provided 5/32" hose marked crank case vent</p> <p>26.3.2. Attach one end to factory port on front-driver-side of valve cover</p> <p>26.3.3. Attach other end to vacuum port on intake tube</p>	 <p>Crank case vent</p>
<p>26.4. Connect MAP sensor to boost</p> <p>26.4.1. Use provided hose marked MAP sensor and connect to boost port on supercharger adapter plate</p> <p>26.5. Attach provided hose to heater AC line and 5/32" vacuum port on supercharger flange</p> <p>26.6. Attach stock cruise control hose to vacuum port on intake tube</p>	<p>Figure 37: Vacuum hoses properly installed.</p>
<p>26.7. After all hoses are connected engine should look similar to Figure 38</p>	<p>Figure 38: Valve cover vent hose connected to throttle body.</p>
<p>27. Install air filter with elbow</p> <p>27.1. Slide elbow over throttle body</p> <p>27.1.1. Ensure elbow is all the way on</p> <p>27.1.2. Tighten all three hose clamps</p> <p>27.2. Connect fresh air intake hose (provides filtered air to crank case)</p> <p>27.2.1. Use provided 5/16th hose with metal insert marked fresh air intake</p> <p>27.2.2. Attach side with metal insert to front elbow on engine valve cover</p> <p>27.2.3. After installation air filter should look similar to Figure 39</p>	 <p>Figure 39: Air filter with elbow installed.</p>
<p>28. Install IAT sensor</p> <p>28.1. Attach IAT wire connector</p> <p>28.2. Attach to wire loom with zip tie in engine bay</p>	

29. Install provided serpentine belt
- 29.1. Route belt like stock on passenger side of engine
 - 29.2. An example of belt routing without AC is shown in Figure 40
 - 29.3. Belt routing on passenger side with AC is shown in Figure 41
 - 29.4. Tension belt with rotating disc
 - 29.5. Slightly loosen both bolts on disc
 - 29.6. Use a wrench on center nut to tension belt
 - 29.7. While holding tension on belt, tighten both bolts on disc



Figure 40: Belt routing without AC.




Figure 41: Belt routing on passenger side with AC.

30. Check all bolts are tight, wires are connected, hoses are connected, and all steps in instructions were completed

31. Clean battery terminals, reconnect positive terminal and tighten nut

32. Check for fuel leaks again by switching key to on for several seconds to pressurize fuel system
- 32.1. Do not start engine till sure no fuel leaks are present

33. Power steering initial operation
- 33.1. Add MOPAR power steering fluid or equivalent till fluid is between both lines on outside of reservoir

<p>33.2. Start engine and run for a few seconds, then turn off</p> <p>33.3. Check fluid level and add as necessary</p> <p>33.4. Repeat above steps till fluid level stops dropping</p> <p>33.5. Start engine and slowly turn steering wheel from lock to lock</p> <p>33.6. Stop engine and check fluid level again and add if necessary</p> <p>33.7. If the fluid is milky or very foamy, let vehicle stand for a few minutes, then repeat above steps</p> <p>33.8. Foamy fluid can damage a pump if vehicle is run for a prolonged period</p>	
<p>34. All done</p>	 <p>Figure 42: Finished</p>

Note:

If any part of the instructions are not clear or are missing any information you would find helpful please let us know so we can update them.

Rev: 2020-06-29