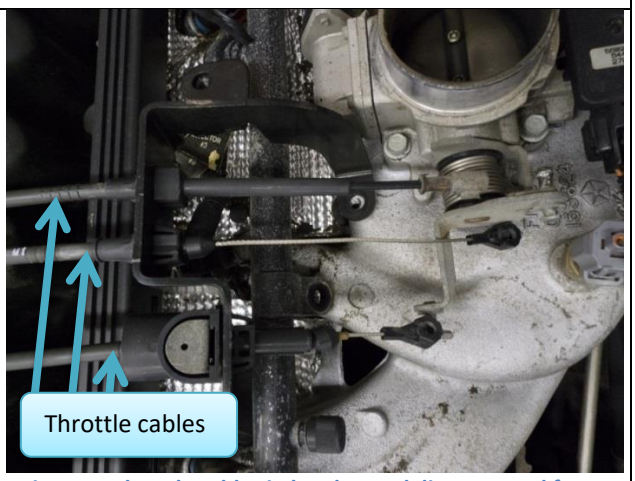
4.0L 1996-2001 XJ Supercharger install instructions

Preinstall

1) Tuning is required when using a pulley smaller than 3.00”. An AFR gauge is recommended when tuning the fuel map. We are happy to assist in making tuning adjustments. Please contact us to setup and appointment.
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.
   b) You will be moving your fuel injectors to the included manifold. Therefore, now is a good time to replace your fuel injectors if desired.
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!
4) Oil level in supercharger
   a) We recommend checking the level of oil in the supercharger every oil change. We add 130mL of oil.

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 2.1. Plastic zip top bags with part descriptions work very well for small parts 2.2. 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 box and fresh air vent tube 3.1. Remove air box top and fresh air vent tube (Figure 2)	 Figure 2: Stock air box top, filter and fresh air vent tube.

3.2. Remove air box bottom (Figure 3)	 Figure 3: Stock air box.
3.3. After removal engine bay should look similar to Figure 4	 Figure 4: Stock air box and fresh air vent hose removed.
4. Remove throttle cable bracket. 4.1. Disconnect throttle cables from throttle body (Figure 5)	 Figure 5: Throttle cables in bracket and disconnected from throttle body.

4.2. Remove cables from bracket
  4.2.1. Release cables with plyers pressed on each tab on cable clips
  4.2.2. Wiggle cable clips till cables is freed
4.3. Bracket after removal (Figure 6)

Figure 6: Throttle cable bracket.

4.4. Engine after throttle bracket removed (Figure 7)

Figure 7: After removal of throttle body bracket.

4.5. Lay throttle cables out of the way on the passenger side of engine bay like in Figure 8

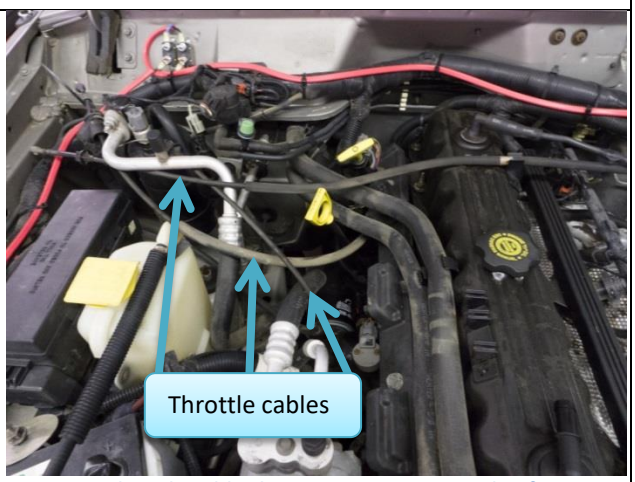


Figure 8: Throttle cables lying over passenger side of engine bay.

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

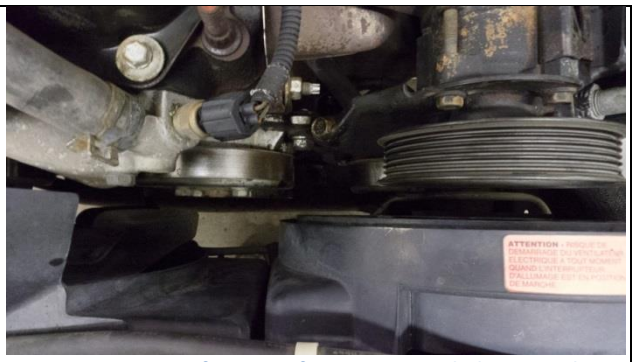


Figure 9: Front of engine after serpentine belt removal.

6. Remove power steering bracket.
   6.1. Remove three bolts holding power steering pump (Figure 10)
   6.2. Remove four bolts securing bracket to engine

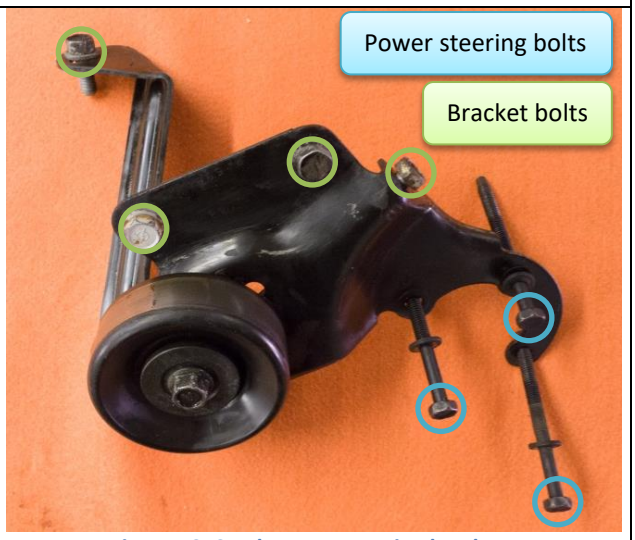


Figure 10: Stock power steering bracket.

   6.2.1. Lay pump where the air box was (Figure 11)

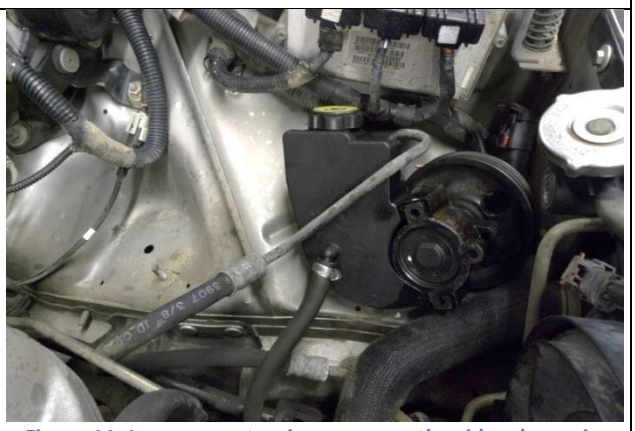


Figure 11: Lay power steering pump on the side where air box was.

6.3. After removal engine should look similar to Figure 12

Figure 12: After power steering pump and bracket removal.

7. Remove power steering pump and lines
   - 7.1. Disconnect power steering lines from pump and steering box
   - 7.2. Remove power steering reservoir from pump
     - 7.2.1. This can be tricky, but when done right should not require much force
     - 7.2.2. Place pump pulley in a soft jaw vice
     - 7.2.3. Remove two black metal clips holding tank and pump together
       - 7.2.3.1. Using a flathead screwdriver above clip carefully lift up tab till just flush with surrounding surface
       - 7.2.3.2. Use a strong metal rod placed up against body of clip along flat edge
         - 7.2.3.2.1. Lightly tap rod till clip slides off
         - 7.2.3.2.2. This should happen smoothly. If binding occurs lifting up tab a bit more should help
   - 7.3. Remove O-ring inside pump in large opening
     - 7.3.1. Install supplied aluminum spigot with provided O-ring
       - 7.3.1.1. Gently tap spigot into place

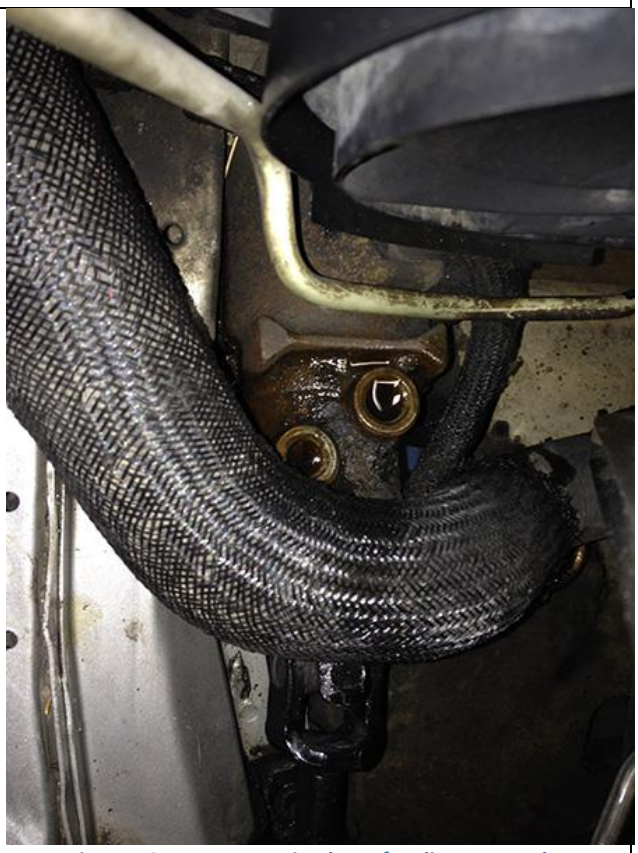


Figure 13: Power steering box after line removal.

8. Remove throttle body.
    8.1. Disconnect three wire connections on throttle body before removing show in Figure 14
        8.1.1. Idle air control connector (IAC)
        8.1.2. Throttle position Sensor (TPS)
        8.1.3. Manifold absolute pressure (MAP)
        8.1.4. Use zip ties or bungee cords to hold wires out of the way
    8.2. Disconnect vacuum line from throttle body
    8.3. Remove MAP sensor from throttle body
        8.3.1. Remove two bolts from side

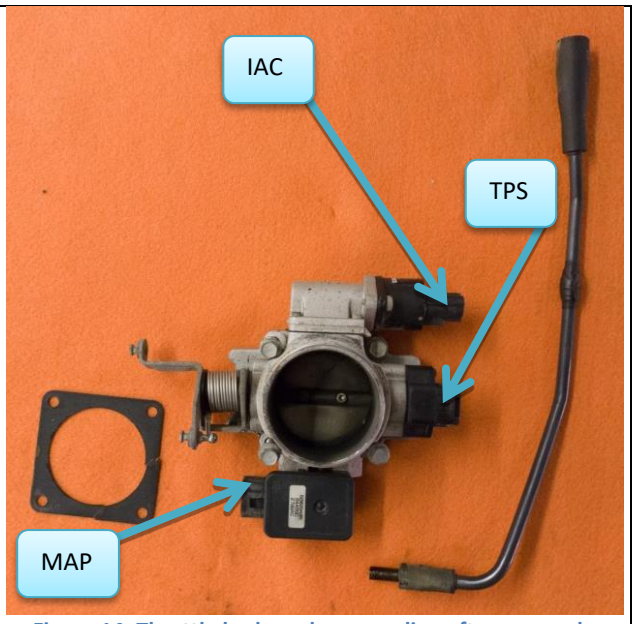


Figure 14: Throttle body and vacuum line after removal.

8.4. After removal intake manifold should look like Figure 15


Figure 15: Intake manifold after throttle body removal.

9. Disconnect vacuum hoses and lines from top and side of intake manifold
    9.1. 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 measures the boost pressure.
    9.2. Remove brake booster hose
        9.2.1. Largest hose connected to intake manifold
    9.3. Remove stock rubber ends from cruise control and heater AC lines
        9.3.1. Gently twist ends to release them
        9.3.2. Use a flat head screw driver under the ends to push off easily

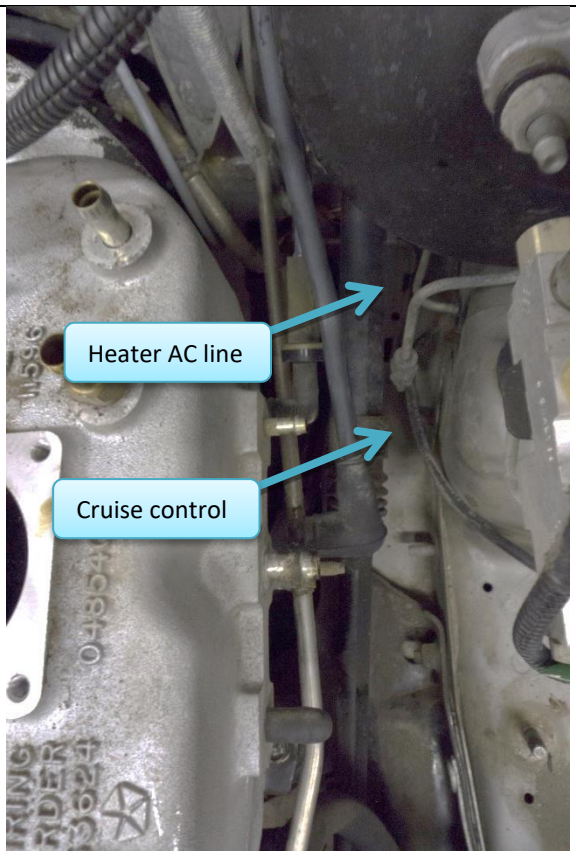


Figure 16: Vacuum hose connections on top and side of intake manifold.

10. Disconnect fuel line from fuel rail
    10.1. Release fuel pressure by removing Schrader valve from port on fuel rail

Figure 17: Fuel rail.

10.2. Remove stock fuel line from fuel rail
    10.2.1. Use a 5/16” fuel line disconnect tool to disconnect line from rail

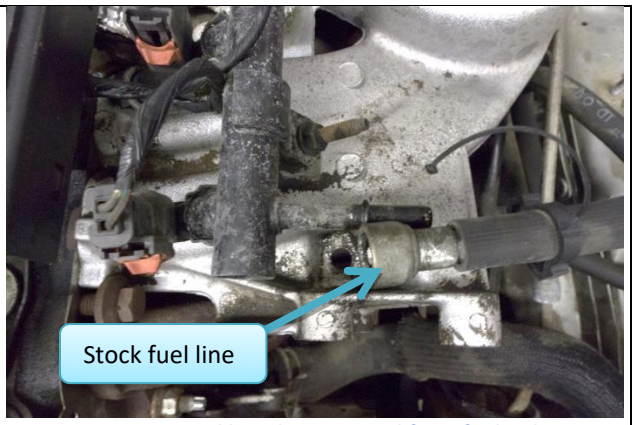


Figure 18: Fuel line disconnected from fuel rail.

11. Remove fuel rail, fuel injectors, IAT and move wire housing
    11.1. Remove four bolts/studs from rail shown in Figure 19
    11.2. Remove IAT sensor

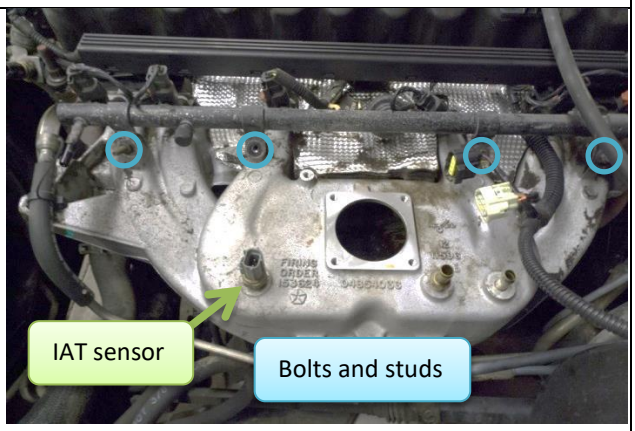


Figure 19: Fuel rail and wire housing before removal.

11.3. Fuel rail and injectors after removal (Figure 20)


Figure 20: Fuel rail after removal.

11.4. Lift off wire chase
    11.4.1. Use a pry bar directly below chase hold-downs that slide over studs on engine
        11.4.1.1. When pry bar is positioned correctly, only a little force is necessary
    11.4.2. Lay chase out of the way on passenger side of valve cover (Figure 21)

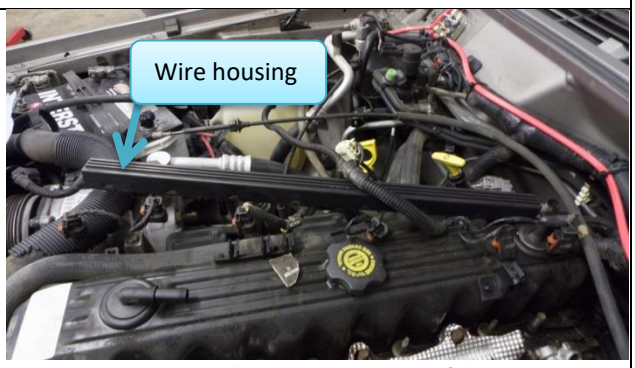
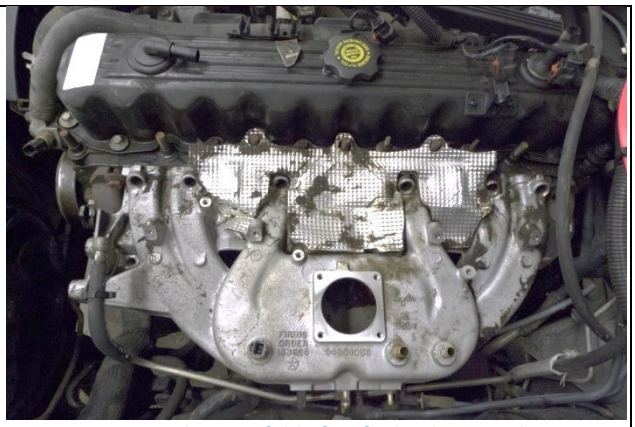
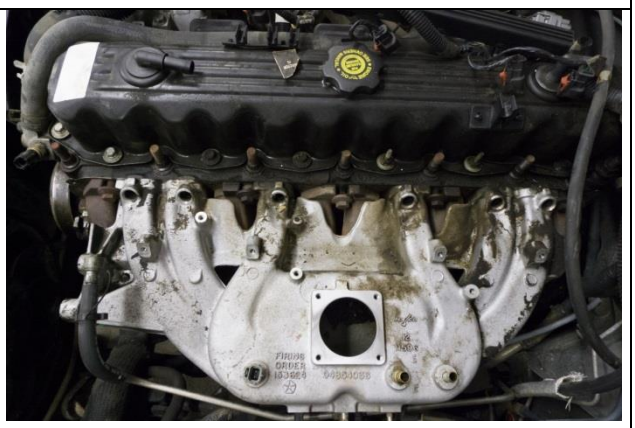


Figure 21: Wire housing moved out of the way.

11.5. After removing fuel rail, fuel injectors and wire housing engine should look like Figure 22	 **Figure 22: Intake manifold after fuel rail removal, wire housing moved and heat shield in place.**
12. Remove intake manifold and heat shield (if your vehicle has one) 12.1. Carefully remove heat shield (Figure 23) 12.1.1. It is delicate	 **Figure 23: Heat shield after removal.**
12.1.2. After removal, intake manifold area should look like Figure 24	 **Figure 24: Intake manifold after removing heat shield.**

12.2. Remove intake manifold (Figure 24)
- 12.2.1. Don't remove the 3 bolts that hold the exhaust manifold in place if you are not changing the gasket.
- 12.2.2. Remove the four bolts and washers on top and four on bottom of intake manifold
  - 12.2.2.1. Note where holes are located for reference when installing provided supercharger intake assembly (Figure 25)
  - 12.2.2.2. Clean bolts with a wire brush and spray with lubricant like WD40 since these are reused on installation

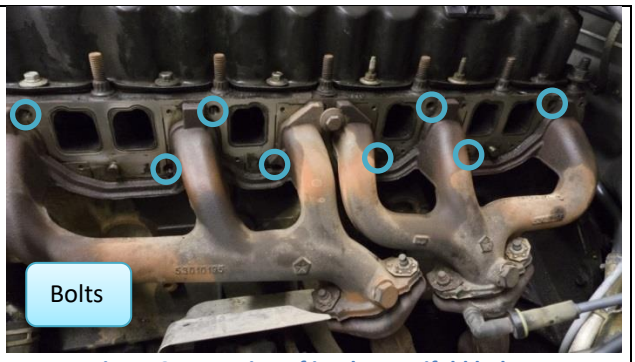


Figure 25: Location of intake manifold bolts.

- 12.2.3. Intake manifold after removal (Figure 26)


Figure 26: Intake manifold after removal.

12.3. Inspect manifold gasket (Figure 27)
- 12.3.1. Replace if any area is damaged
  - 12.3.1.1. Commonly available at parts stores like NAPA

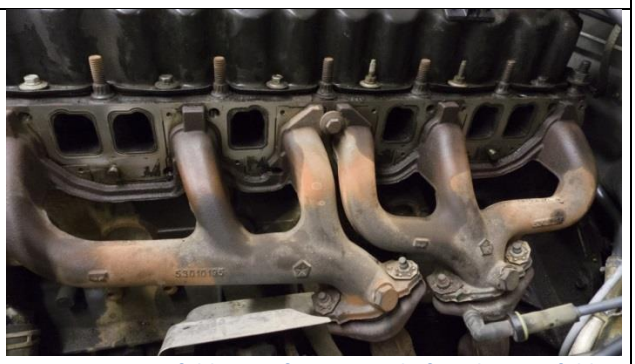


Figure 27: Manifold area after removal of intake manifold. Note - Manifold gasket has been cleaned.

13. With stock parts removed (other than power steering components) engine bay should look similar to Figure 28 13.1. Check the condition of hoses/lines on engine 13.1.1. Coolant hoses 13.1.2. Vacuum hoses/lines 13.2. Check for loose or damaged wires in engine bay 13.3. Check water pump for leaks	 **Figure 28: Engine bay with stock items removed except power steering pump and reservoir.**
14. Check spark plug and gaps 14.1. Check spark plugs condition and replace if needed 14.2. Spark plugs should be gapped at 0.030”	

Overview of parts

Executive summary of install

15. Install bypass valve on supercharger before installation 16
16. Install stock throttle body and supplied gasket before installing supercharger (Figure 28) 18
17. Install supercharger intake manifold assembly 21
18. Install provided power steering reservoir (Figure 30) 23
19. Install power steering pump and supercharger nose support bracket 24
20. Install power steering hoses on steering box, pump and reservoir 26
21. Install heat shield, fuel injectors and fuel rail 28
22. Install new 48” fuel line 29
23. Connect new fuel line quick disconnect end to fuel line where stock line was removed 30
24. Zip tie new fuel line to clip on firewall 30
25. Install provided fuel line extension (Skip if received 48” hose) 32
26. Install provided 7th fuel injector line 33
27. Check for fuel leaks 34
28. Install throttle cable bracket and cables (Figure 41) 34
29. Install MAP sensor 35
30. Connect vacuum hoses 36
31. Unbundle wiring loom to allow greater distance between Throttle body, MAP sensor and IAT sensor 39
32. Reconnect fuel injector wires 41
33. Install air filter with elbow 41
34. Install IAT sensor ..... **Error! Bookmark not defined.**
    34.1. Remove plug on bottom of air filter ..... **Error! Bookmark not defined.**
    34.2. Screw IAT into hole ..... **Error! Bookmark not defined.**
    34.3. Attach IAT wire connector ..... **Error! Bookmark not defined.**
35. Install provided serpentine belt 43
    35.1. Route belt like stock on passenger side of engine 43
    35.2. An example of belt routing with AC is shown in Figure 56 43
    35.3. Tension belt with rotating disc 43

35.4. Slightly loosen both bolts on disc 43
35.5. Use a wrench on center nut to tension belt 43
35.6. While holding tension on belt, tighten both bolts on disc 43
36. Check all bolts are tight, wires are connected, hoses are connected, and all steps in instructions were completed 43
37. Clean battery terminals, reconnect positive terminal and tighten nut 43
38. Check for fuel leaks again by switching key to on for several seconds to pressurize fuel system . 43
39. Power steering initial operation 43
39.1. Add MOPAR power steering fluid or equivalent till fluid is between both lines on outside of reservoir 43
39.2. Start engine and run for a few seconds, then turn off 44
39.3. Check fluid level and add as necessary 44
39.4. Repeat above steps till fluid level stops dropping 44
39.5. Start engine and slowly turn steering wheel from lock to lock 44
39.6. Stop engine and check fluid level again and add if necessary 44
39.7. If the fluid is milky or very foamy, let vehicle stand for a few minutes, then repeat above steps 44
39.8. Foamy fluid can damage a pump if vehicle is run for a prolonged period 44
40. All done 44

Supercharger installation

1. Torque specs for bolts if not listed
    1.1. Examples from tables on right
        1.1.1. 6mm bolts torque to 12 Nm (9 lb-ft)
        1.1.2. 8mm bolts torque to 30 Nm (22 lb-ft)
        1.1.3. 3/8” bolts torque to 27 Nm (20 lb-ft)
        1.1.4. Use the 18-8 S/S column for the US recommended bolt torque

Metric Recommended Bolt Torque Print this page

Bolt Diameter (mm)	Recommended Torque (Nm)	
	Class 8.8	Class 10.9
5	7	9
6	12	16
8	30	40
10	55	75
12	100	135
14	160	215
16	245	335
20	480	650

29: https://www.boltdepot.com/fastener-information/bolts/Metric-Recommended-Torque.aspx

US Recommended Bolt Torque

Print this page

Size	Recommended Torque											
	Grade 2		Grade 5		Grade 8		18-8 S/S		Bronze		Brass	
	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine
#4*	-	-	-	-	-	-	5.2	-	4.8	-	4.3	-
#6*	-	-	-	-	-	-	9.6	-	8.9	-	7.9	-
#8*	-	-	-	-	-	-	19.8	-	18.4	-	16.2	-
#10*	-	-	-	-	-	-	22.8	31.7	21.2	29.3	18.6	25.9
1/4"	4	4.7	6.3	7.3	9	10	6.3	7.8	5.7	7.3	5.1	6.4
5/16"	8	9	13	14	18	20	11	11.8	10.3	10.9	8.9	9.7
3/8"	15	17	23	26	33	37	20	22	18	20	16	18
7/16"	24	27	37	41	52	58	31	33	29	31	26	27
1/2"	37	41	57	64	80	90	43	45	40	42	35	37
9/16"	53	59	82	91	115	129	57	63	53	58	47	51
5/8"	73	83	112	128	159	180	93	104	86	96	76	85
3/4"	125	138	200	223	282	315	128	124	104	102	118	115
7/8"	129	144	322	355	454	501	194	193	178	178	159	158
1"†	188	210	483	541	682	764	287	289	265	240	235	212

* Sizes from #4 to #10 are in lb-in.
Sizes from 1/4" up are in lb-ft.
† Fine thread figures are for 1"-14.
Grade 2, 5, and 8 values are for slightly lubricated bolts.

30: https://www.boltdepot.com/fastener-information/bolts/US-Recommended-Torque.aspx

15. Install ABS bracket relocator and drill new hole **(WJ 4.0L only)**
    - 15.1. ABS bracket must be moved away from supercharger about 1.5”
    - 15.2. Remove nut and bolt holding bracket to chassis

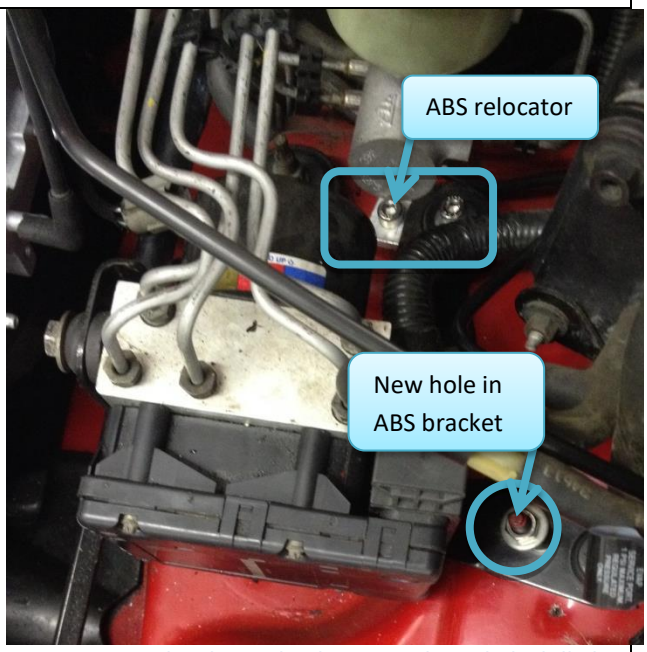


Figure 31: ABS bracket with relocator and new hole drilled.

16. Drill hole in front tab as shown in Figure 32
    16.1. It is much easier to drill new hole by removing bracket from vehicle
    16.2. Install nut loosely

Figure 32: New hole to relocate front tab on ABS bracket.

17. Install relocator as shown in Figure 33
    17.1. Torque bolts and nut on ABS bracket and relocator

Figure 33: ABS bracket relocator installed on rear tab.

18. Install bypass valve on supercharger before installation (Type 1 Figure 34, skip to step 19 if it looks different)
    18.1. Insert stem into slotted bypass valve flipper
        18.1.1. Angle bypass valve forward to insert then rotate 90° clock wise to align with two bolt holes
    18.2. Loosely tighten two provided bolts and washers
        18.2.1. Two 8x20mm bolts
    18.3. Position bypass valve so that it is as far back and upright as possible while maintaining pressure on flipper
        18.3.1. Ensure pressure is exerted on

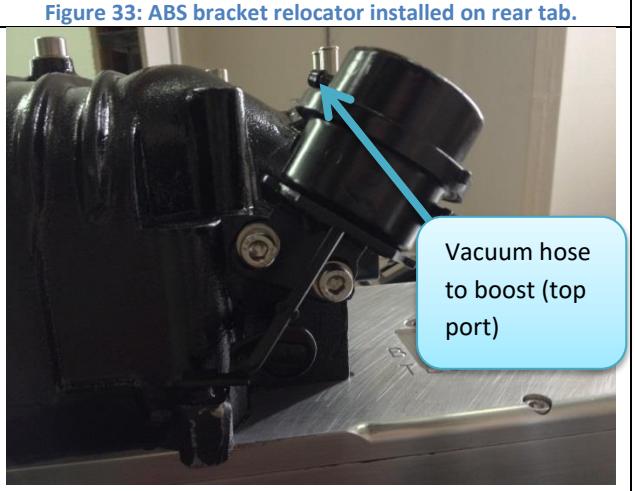


Figure 34: Bypass valve installed on side of supercharger (Type 1).

bypass valve butterfly shaft holding it down on bump stop

18.3.2. Tighten two bolts tightly

18.4. Connect vacuum line to top most port on bypass valve **(boost)**

18.5. Leave lower port open to atmosphere, nothing attaches to it

19. Install bypass valve on supercharger before installation

19.1. Loosely tighten two 8x20mm bolts through bypass bracket

19.2. Insert fasteners through bypass shaft and butterfly hole (Figure 36)

19.2.1. Install nut so the shaft can smoothly actuate and not bind

19.3. Position bypass valve ensuring pressure is exerted on bypass valve butterfly shaft holding it down on bump stop

19.4. Tighten two 8x20mm bolts tightly

19.5. Connect vacuum line to port on bypass valve **(boost)**

19.6. Check tab locks bypass valve to bracket

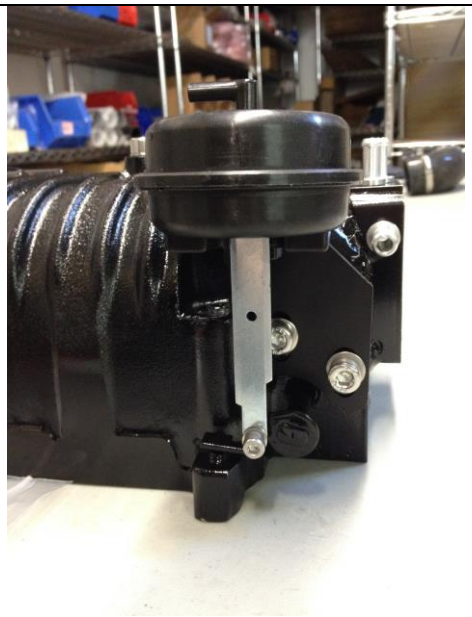


Figure 35: Bypass valve installed on supercharger (Type 2).

Figure 36: Bypass valve shaft fasteners arrangement (Type 2).

20. Install stock throttle body and gasket if supplied, before installing supercharger (Figure 37)
    20.1. Use four provided bolts and washers

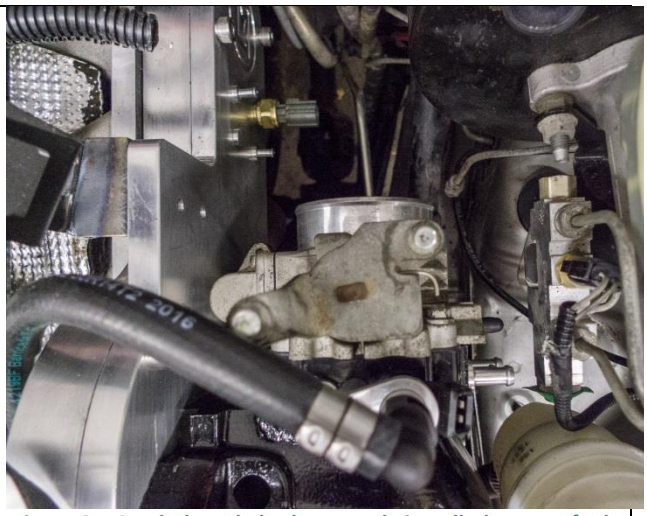


Figure 37: Stock throttle body properly installed. Ignore fuel line in lower part of image.

21. Install intake manifold, tub, plate and supercharger **(WJ ONLY)**
    21.1. Disassemble intake assembly
        21.1.1. Remove bolts from back side of assembly (Figure 38, Figure 39,)
        21.1.2. Keep track of what hole bolts came out of. There are many different lengths of bolts.

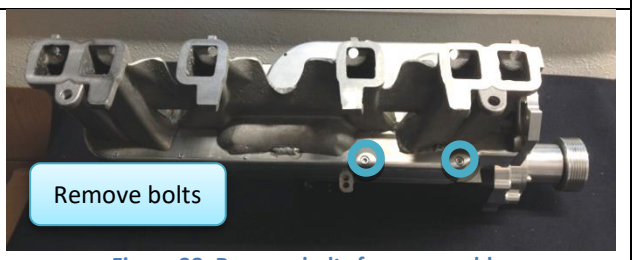


Figure 38: Remove bolts from assembly.

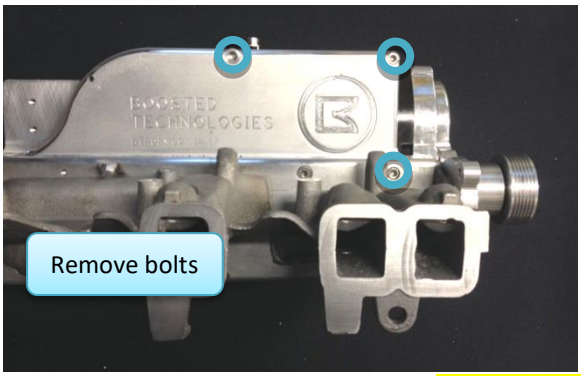


Figure 39: Remove bolts from assembly. Do not remove unmarked bolt in photo.

21.1.3. Remove bolts from front side of assembly (Figure 40)

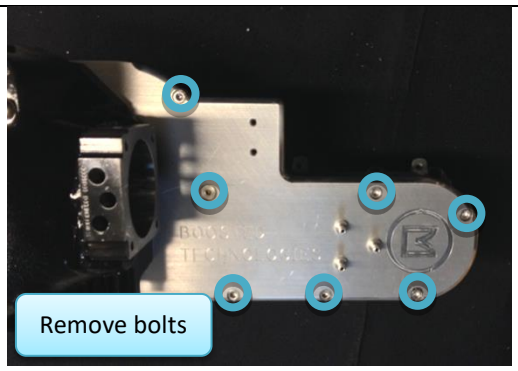
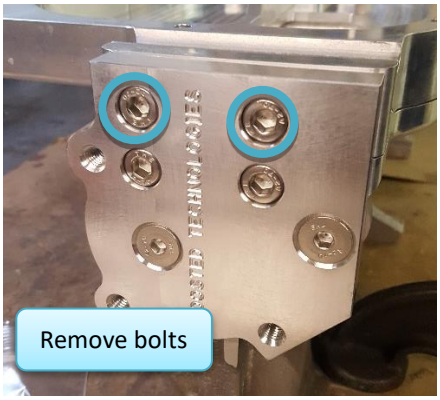


Figure 40: Remove bolts from assembly.



21.2. Do not disassemble further. Leave tub attached to manifold.

21.3. The supercharger intake assembly must be installed in phases on a WJ because the AC line runs between the intake parts

21.4. Install intake manifold by following step 22 below, then return to step 21.5.

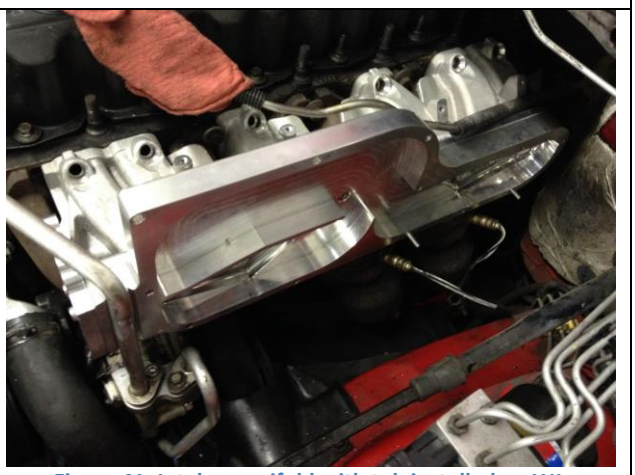
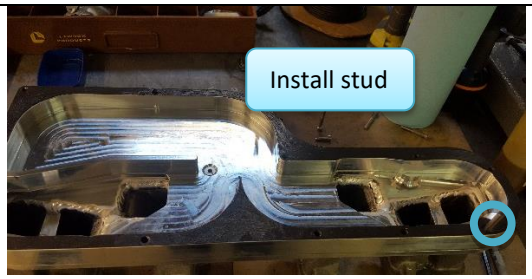


Figure 41: Intake manifold with tub installed on WJ.

21.5. Install provided 6x60mm stud in hole first and leave in when mating with tub in below steps	
21.6. Apply RTV on all surfaces	 Figure 42: RTV applied in an even coating on all surfaces.
21.7. Install provided 6x60mm stud in tub for alignment	 Figure 43: Stud installed for alignment.
21.8. Install supercharger/mounting plate on tub and secure with bolts 21.8.1. Use Loctite 243 on all bolts 21.8.2. Bolt sizes are listed in Figure 44-Figure 46 21.8.3. Remove studs after installing other bolts 21.8.4. Line up plates edges before torqueing together 21.8.4.1. Horizontal faces should line up with each other 21.8.5. Be very careful not to strip bolts when installing/torqueing	 Figure 44: Front bolts.

21.8.6. Use a torque wrench for final torque

21.8.6.1. (6mm bolts = 9-12ft-lbs torque), (8mm bolts = 22-30ft-lbs torque)

21.8.7. Once RTV has dried, clean off any RTV that may have squeezed out the sides of the assembly with textured towel

Figure 45: Upper rear bolts.

Figure 46: Lower rear bolts.

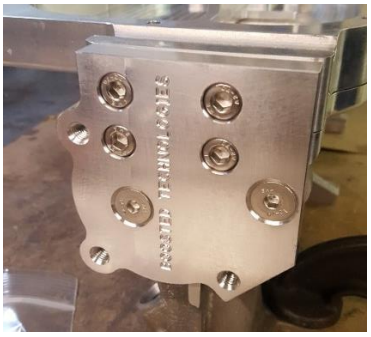


Figure 47: Torque power steering pump mount plate bolts last.

22. Install supercharger intake manifold assembly **(XJ ONLY)**

22.1. Two people are recommended for this step because the assembly is heavy and may be awkward for one person to hold

22.2. Before installing

22.2.1. Observe location of two alignment pins on manifold area and two pin holes on intake assembly

22.2.2. Ensure each bolt has a washer on

it and has been cleaned and lubricated with WD40 or similar

22.2.3. Have two bolts with washers ready to go on once assembly is held onto manifold

22.3. Install the assembly with one person holding the supercharger tight up against the intake manifold while the other snuggly tightens two bolts with washers

22.3.1. Ensure assembly alignment pin holes are over alignment pins on engine before snugging up the bolts

22.3.2. Insert the two bolts with washers into the bolt holes on the extreme front and rear of the engine

22.3.3. Install remaining two bolts on the top of the manifold

22.3.4. Use flexible 9/16th flex socket with a 6" extension for bolts under manifold

22.3.4.1. A shop light placed directly under manifold area facing upwards helps with aligning bolts in holes

Figure 48: Supercharger intake manifold assembly installed.

22.3.5. In a crisscross pattern start at bolt "1" shown in Figure 49, tighten each bolt up first finger tight

22.3.6. Torque bolts 1-5 to 24 ft. lbs. (33Nm)

22.3.7. Torque bolts 6-7 to 23 ft. lbs. (31Nm)

22.3.8. Torque bolts 8-11 to 24 ft. lbs. (33Nm)

22.3.8.1. Check them a third time in a circular pattern ensuring each one is tightened

22.4. After driving a few hundred miles follow the same torque sequence to tighten any bolts that may have loosened

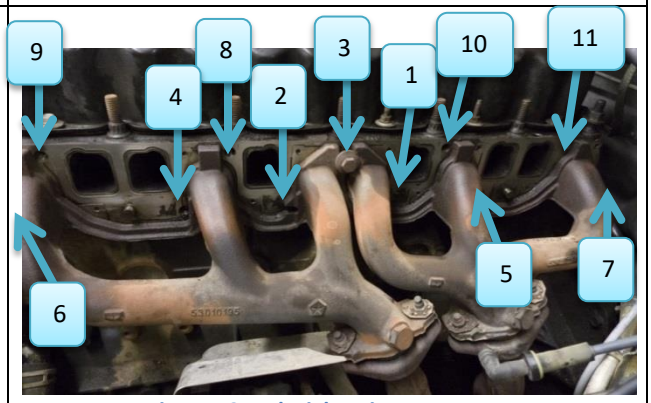


Figure 49: Bolt tightening sequence.

23. Install provided power steering reservoir (Figure 50) or (Figure 51)
24. Use provided bolts and self tapping screws to install bracket
25. Ensure reservoir is placed above power steering pump to prevent air getting in system
26. Keep feed line (3/4” inside diameter) as straight as possible

Figure 50: Power steering reservoir and bracket type 1.

Figure 51: Power steering reservoir and bracket type 2.

27. Install provided aluminum adapter fitting in power steering pump
    27.1. Lubricate O-ring with Vaseline or other suitable lubricant
    27.2. Ensure O-ring is not damaged during install
    27.3. Press in or gently hammer fitting into hole on side of pump (low pressure feed side)
        27.3.1. A dead blow hammer with a soft face will ease install
    27.4. Ensure fitting is pressed in all the way

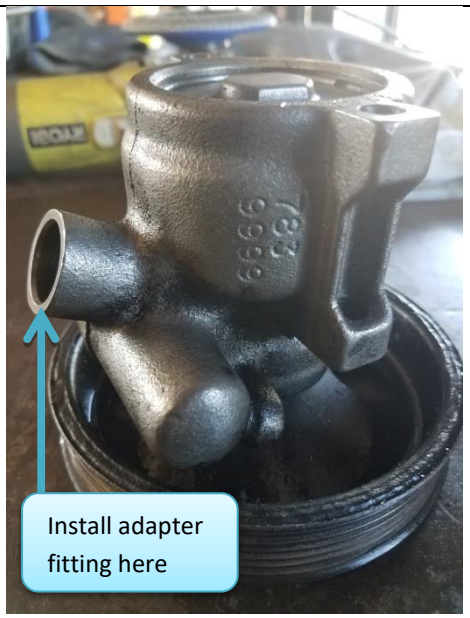


Figure 52: Power steering adapter fitting install location.

28. Install power steering pump and supercharger nose support bracket (**XJ ONLY**)
    28.1. Before installing pump, loosely connect supplied pressure line to pump
        28.1.1. Ensure provided small O-rings (in bag) are installed on both ends of pressure line

    28.2. Install pump on intake assembly
        28.2.1. Torque 8mm bolts to 30 Nm (22 lb-ft)

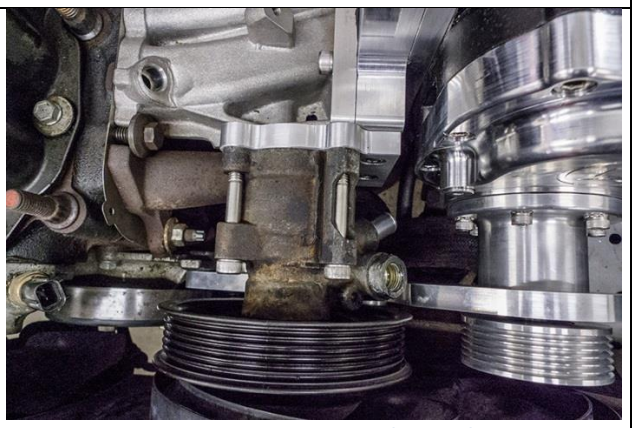


Figure 53: Power steering pump and supercharger nose support installed.

28.3. Install nose support bracket
- 28.3.1. Remove supercharger pulley
- 28.3.2. Apply lubricant like vaseline on nose support O-ring
- 28.3.3. Slide nose support over supercharger nose
- 28.3.4. Install two 3/8x1" flat head bolts on nose support
  - 28.3.4.1. Intake manifold gasket thicknesses vary, which may require filing bolt holes slightly to fit
- 28.3.5. Reinstall pulley on supercharger
  - 28.3.5.1. Torque bolts to 12 Nm (9 lb-ft)
- 28.3.6. Tensioner disc rotates counter clockwise as viewed in Figure 54 to increase tension on the belt

Figure 54: Nose support installed with tensioner disc.

29. Install power steering pump, idler pulley and bracket (**WJ ONLY**)
    - 29.1. Before installing pump, loosely connect supplied pressure line to pump
      - 29.1.1. Ensure provided small O-rings (in bag) are installed on both ends of pressure line
    - 29.2. Install pump on intake assembly with provided bolts. Use longer bolts through idler bracket.
    - 29.3. Torque 8mm bolts to 30 Nm (22 lb-ft)

Figure 55: WJ idler pulley and bracket installed on power steering pump.

30. Install power steering hoses on steering box, pump and reservoir
    30.1. Remove stock return hose from metal line shown in Figure 56

Figure 56: Stock power steering return line with tube removed and new high pressure line installed.

    30.2. Hose routing
        30.2.1. Route pressure line down through gap as shown in Figure 57

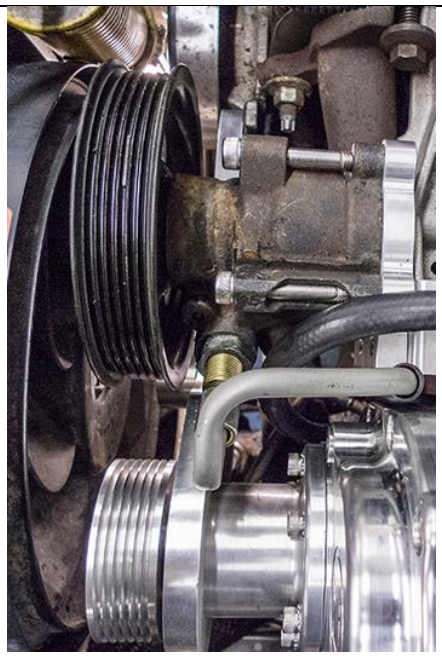


Figure 57: Provided high pressure power steering line installed on power steering pump on left.

        30.2.2. Reservoir feed hose connected to lower port to new aluminum spigot under supercharger away from exhaust (Figure 58)
            30.2.2.1. Tighten hose clamps
        30.2.3. Reservoir return line from stock metal line shown in Figure 56 to top nub on reservoir
            30.2.3.1. Tighten hose clamps
    30.3. Route metal lines attached to steering box as shown in Figure 56
        30.3.1. Torque pressure line (between

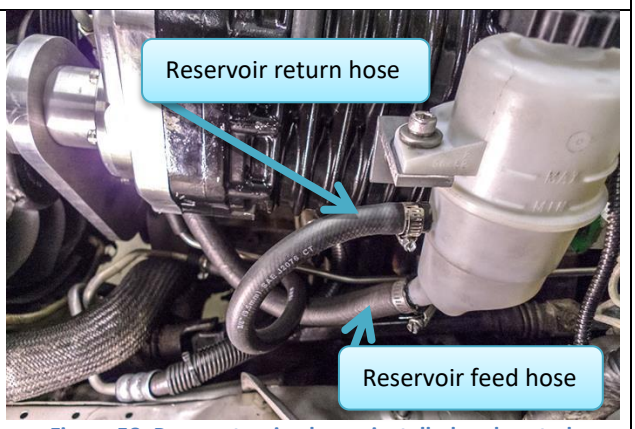
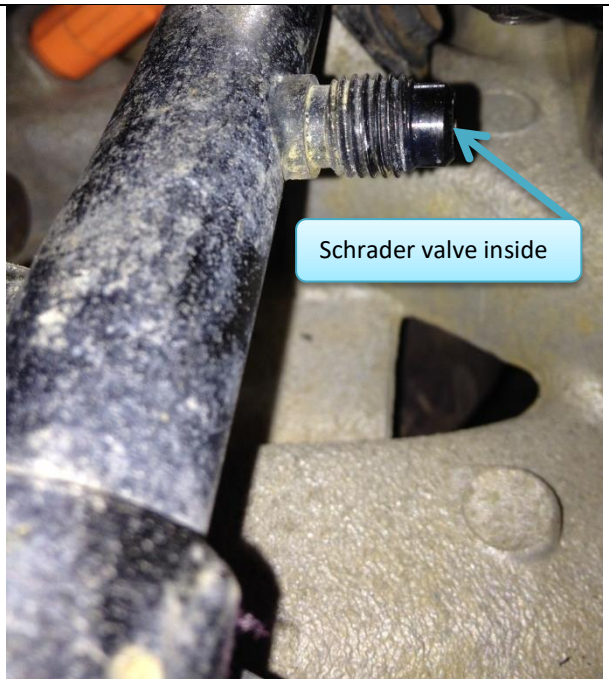
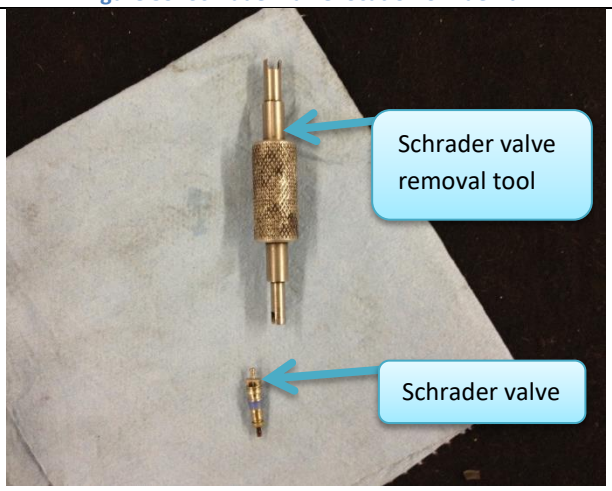


Figure 58: Power steering hoses installed and routed

pump and steering box) to 21 ft. lbs. (28 N-m)	properly.
31. Remove Schrader valve from fuel rail port 32. Remove cap from rail (Figure 59)	 Figure 59: Schrader valve location on fuel rail.
33. Remove valve with Schrader valve removal tool (Figure 60) 34. This is very important, if this step is missed fuel will not reach 7th fuel injector	 Figure 60: Schrader valve removal tool and removed schrader valve.
35. Install fuel line on fuel rail before proceeding 36. Install 90° fitting on Schrader valve port on fuel rail 37. This will be more difficult after installing the fuel rail next to the supercharger assembly	

38. Install heat shield, fuel injectors and fuel rail
    38.1. Reinstall heat shield if there is one
    38.2. Install fuel injectors
        38.2.1. Inspect injectors and O-rings for deposits or damage before installation
            38.2.1.1. Clean with brake cleaner to remove deposits
            38.2.1.2. Replace injectors if they are damaged
            38.2.1.3. Replace O-rings if brittle
        38.2.2. Apply a small amount of lubricant (Vaseline, silicone, etc.) to both O-rings on fuel injectors before installation so O-rings aren't damaged.
        38.2.3. Insert injectors into ports and rotate so connectors are angled upwards as shown in Figure 61
    38.3. Install fuel rail
        38.3.1. Remove MAP sensor bracket from intake manifold
        38.3.2. Install fuel rail over fuel injectors
        38.3.3. Attach front fuel rail bolt
        38.3.4. Attach rear fuel rail bolt with MAP sensor bracket

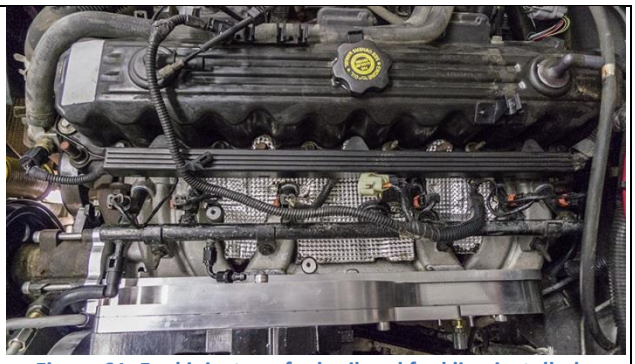


Figure 61: Fuel injectors, fuel rail and fuel line installed.

39. Install new 48” fuel line
    39.1. Connect 90° quick disconnect end to fuel rail at flared tube
    39.2. Lay fuel line over fuel rail and slide other end down next to firewall
    39.3. Loosely zip tie hose to fuel rail as show in Figure 62
        39.3.1. Ensure zip tie on rear of fuel rail is placed forward of a fuel injector or fuel rail hold down so it cannot fall off

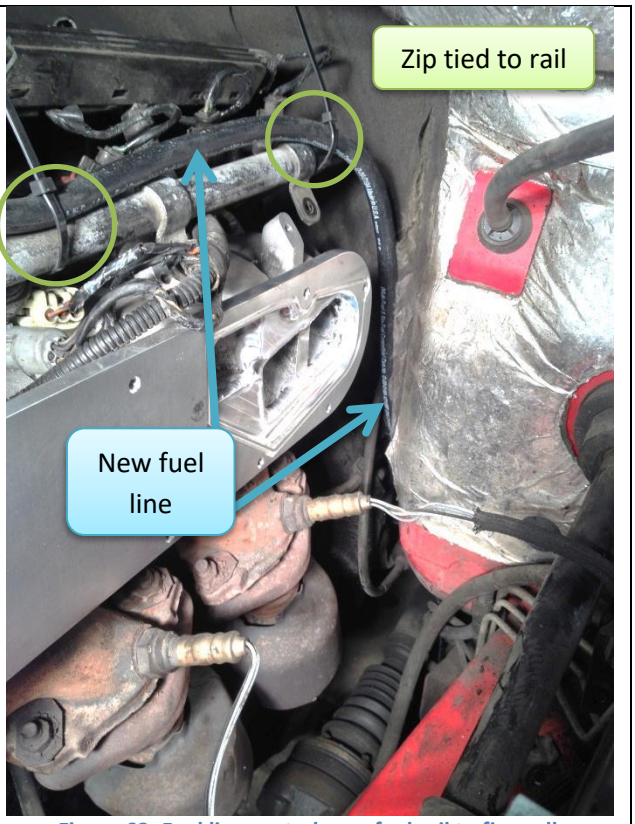


Figure 62: Fuel line routed over fuel rail to firewall.

40.


Figure 63: New fuel line routing.

41. Connect new fuel line quick disconnect end to fuel line where stock line was removed
    41.1. Ensure clip clicks and is pushed on all the way
    41.2. Test by gently trying to pull quick disconnect fitting off

Figure 64: New fuel line connected to fuel line under driver side behind front tire.

42. Zip tie new fuel line to clip on firewall
    42.1. Clip held down factory fuel line
    42.2. Loop zip tie through deepest part of clip and around fuel line
    42.3. Ensure zip tie is very secure and will not slip out of clip
    42.4. This is a very important step to keep the line far from the exhaust

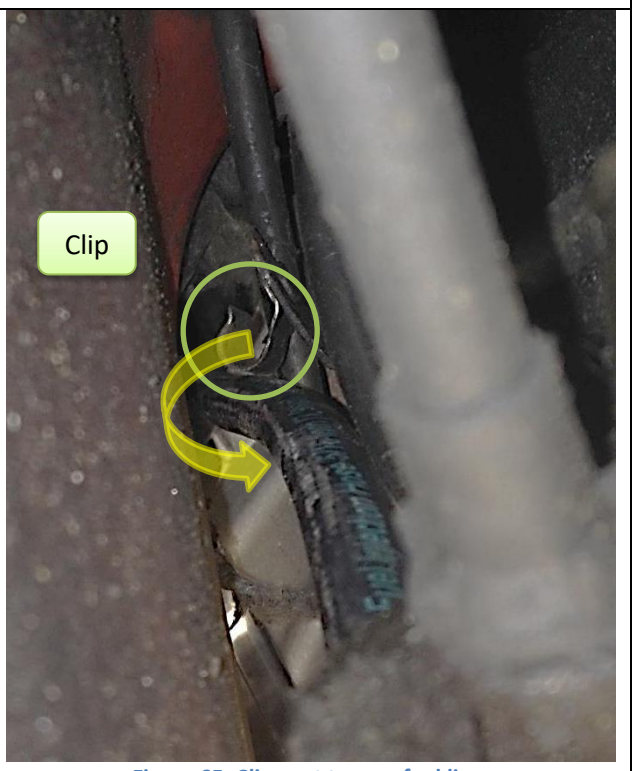


Figure 65: Clip next to new fuel line.

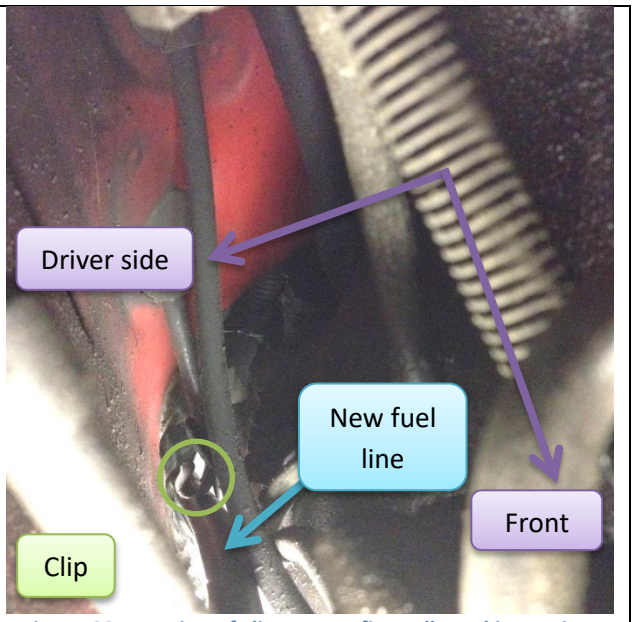


Figure 66: Location of clip on rear firewall. Looking up just behind driver side front tire.

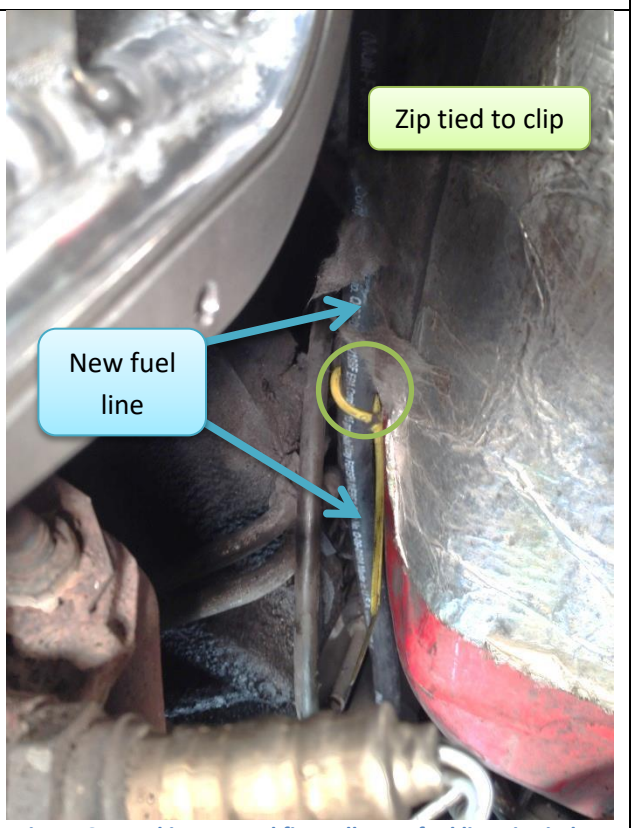


Figure 67: Looking toward firewall, new fuel line zip tied to clip on firewall.

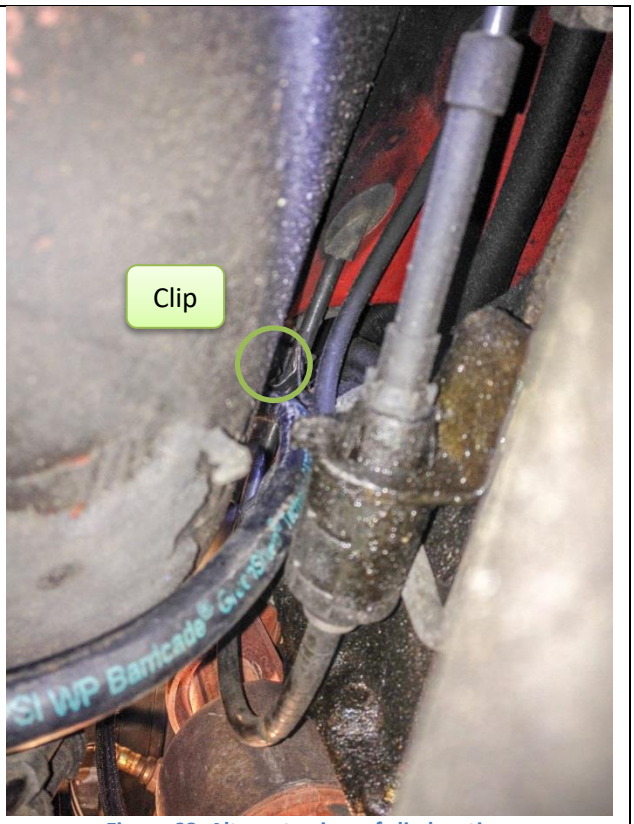


Figure 68: Alternate view of clip location.

43. Install provided fuel line extension (Skip if received 48” hose)
    43.1. Remove stock plastic/rubber end on fuel line
        43.1.1. Should look as shown in Figure 69 when finished

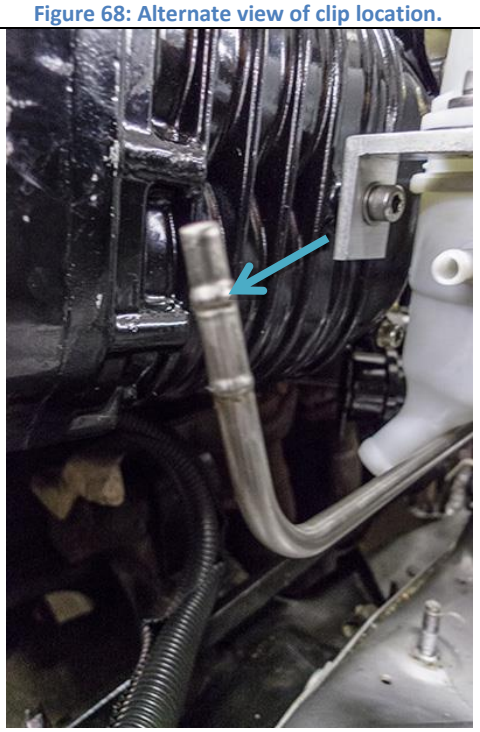


Figure 69: Stock fuel line with plastic/rubber end removed.

43.2. Install provided fuel line extension shown in Figure 70
  43.2.1. Slide open end over metal fuel line shown in Figure 69
  43.2.2. Align clamps over two flared areas on metal fuel line shown in Figure 69 before crimping

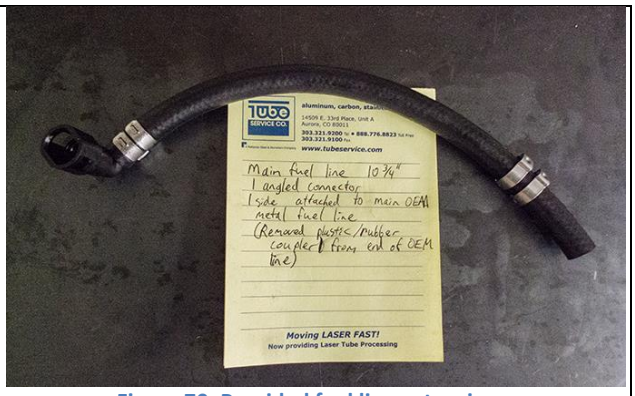


Figure 70: Provided fuel line extension.

43.3. When installed fuel line should look similar to Figure 71

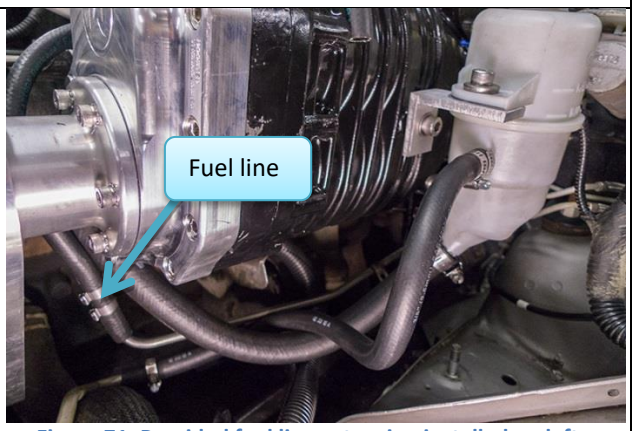


Figure 71: Provided fuel line extension installed on left. Power steering hoses properly installed on right.

44. Install provided 7th fuel injector line
  44.1. Angle connection on fuel injector to face away from throttle body and cables
  44.2. Press quick disconnect on till it clicks
  44.3. After installing ensure throttle cables do not interfere with fuel line throughout their range of travel
  44.4. Gently try to pull quick disconnect from 7th injector to ensure it is secure

Figure 72: 7th fuel injector line.

44.5. After installation 7th fuel injector line should look similar to Figure 73

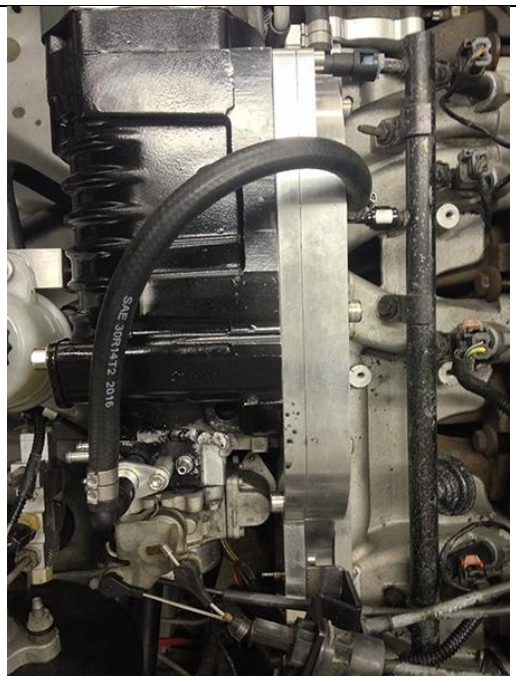


Figure 73: 7th fuel injector line properly oriented away from throttle cables.

45. Check for fuel leaks
    - 45.1. Clean battery terminals, reconnect positive terminal and tighten nut
    - 45.2. Switching key to on for several seconds to pressurize fuel system
        - 45.2.1. Do this several times
        - 45.2.2. Do not start engine
    - 45.3. Check for fuel smell or liquid at all fuel injectors and fuel line connections
    - 45.4. Disconnect battery cable again

46. Install throttle cable bracket and cables (Figure 74)
    - 46.1. Top to bottom cruise control, transmission kick down and throttle cables
        - 46.1.1. Cruise control and transmission kick down slide on discs
        - 46.1.2. Throttle cable snaps on ball
    - 46.2. Ensure all cables are routed to prevent kinks and they do not interfere with anything during operation
        - 46.2.1. Observe cable area and connections for interference while engine is off by fully

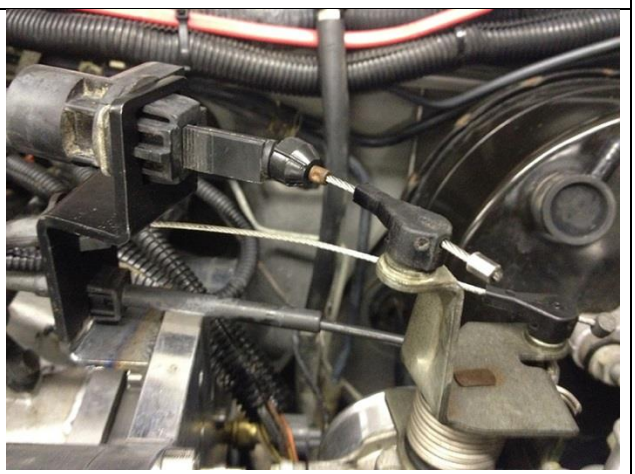
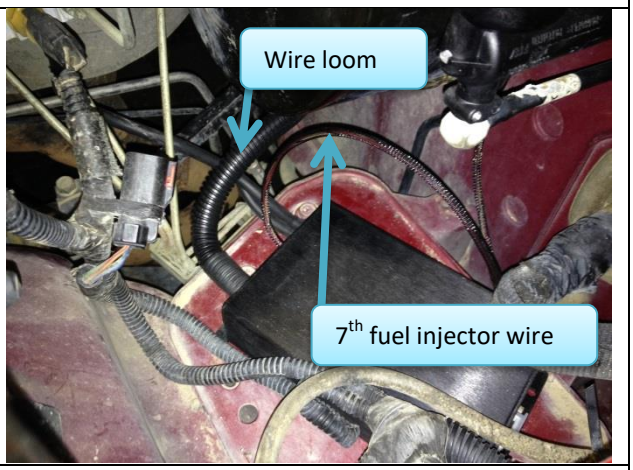
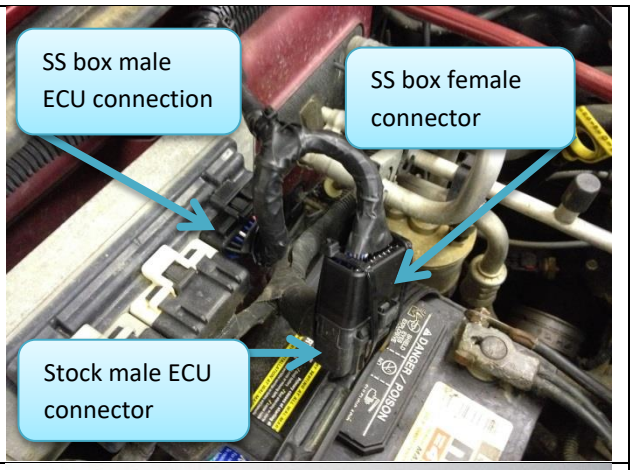
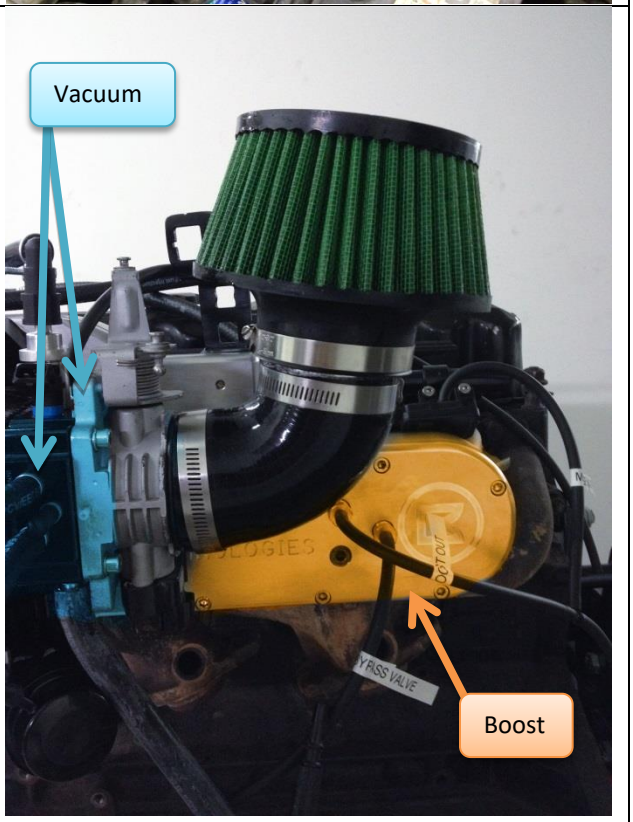
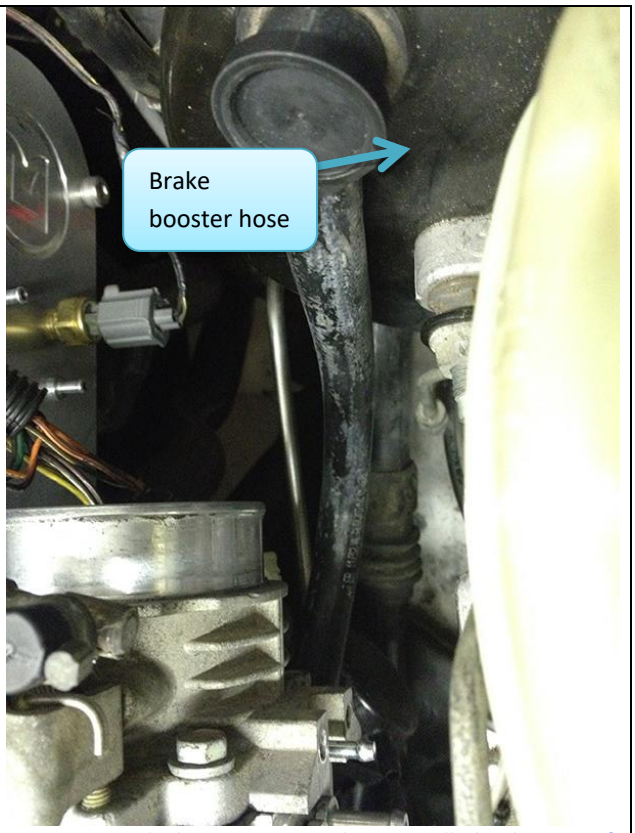
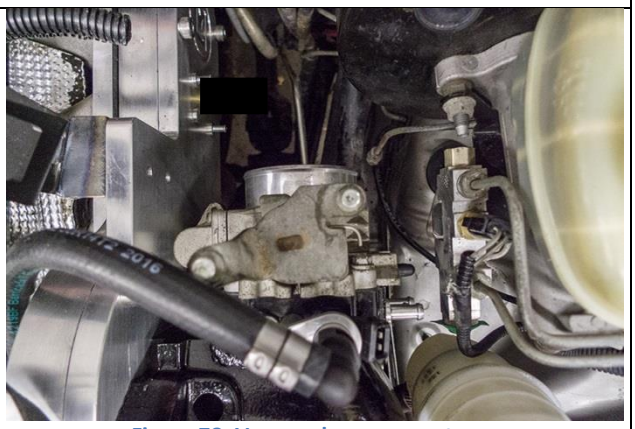


Figure 74: Throttle cable bracket installed with cables properly connected to throttle body.

rotating throttle body butterfly valve 46.3. You may have to adjust the transmission cable for the correct shift points 46.4. After installation cables and bracket should look similar to Figure 74 46.5. Ensure full throttle is reached when depressing the gas pedal fully 46.5.1. If full throttle is not achieved, add washers or a spacer between bracket and plate	
47. Install MAP sensor 47.1. Attach MAP sensor to bracket with connector opening facing front of vehicle (Figure 75)	 Figure 75: MAP sensor installed and properly oriented.
48. Install Split Second box 48.1. ***Ensure Split Second box is kept away from heat and water*** 48.1.1. If the SS box is exposed to excess heat or water it may malfunction 48.2. Attach SS box wires 48.2.1. Large wire loom connects to stock ECU 49. Small wire connects to 7th fuel injector	
49.1.1. Route loom and fuel injector wire across rear firewall 50. Attach fuel injector wire to 7th fuel injector	

50.1.1. Release stock connector on driver side of ECU 50.1.2. Attach SS box male connector to ECU 50.1.3. Attach SS box female connector to stock male ECU connector 50.1.4. Ensure both SS box wire and loom are away from steering column 50.1.5. Secure wire and loom with zip ties to stock loom	
51. Connect vacuum hoses 51.1. The vacuum side and boost ports are shown in Figure 76	 Figure 76: Color overlays of boost (orange) and vacuum (blue) sides of supercharger.

51.1. Connect brake booster hose (Figure 77) 51.1.1. Use provided brake booster hose 51.1.2. Brake booster hose connection to large connector on bottom of throttle body 51.1.3. Ensure connection is good because it is difficult to see connector 51.1.4. If brakes are very weak after install check this connection first	 Figure 77: Brake booster vacuum hose installed to bottom of throttle body.
51.2. Connect Split Second hoses 51.2.1. Use provided 5/32” vacuum lines 51.2.2. Connect top port to boost (or only port) on Split Second box to one of the 1/8” ports on supercharger intake plate below MAP sensor (refer to vacuum line summary) 51.2.3. Connect bottom port to vacuum (if present) on Split Second box to 1/8” port on throttle body or supercharger	 Figure 78: Vacuum hose connectors.

51.3. Crank case vent (vents air from crank case with a vacuum)
    51.3.1. Use provided 5/16” hose with metal insert marked crank case vent
    51.3.2. Insert metal adapter side to crank case vent (plastic elbow near firewall on valve cover)
    51.3.3. Attach open end to large vacuum port on supercharger

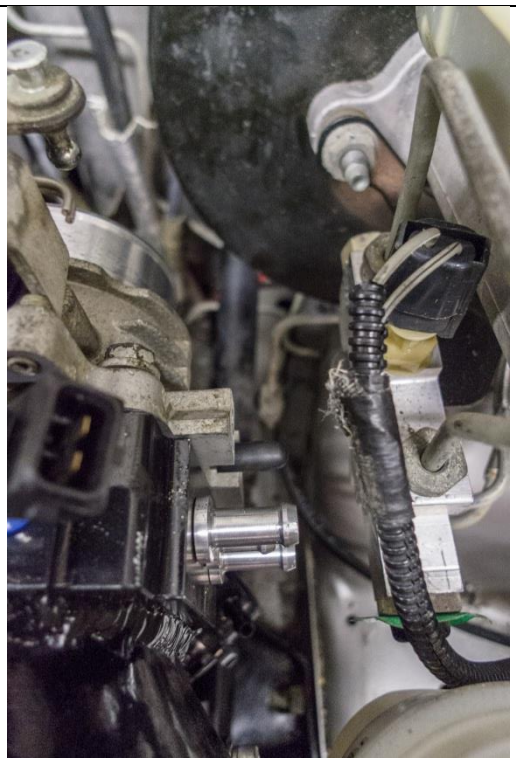


Figure 79: Vacuum hose connections on driver side of throttle body.

51.4. Connect MAP sensor to boost
    51.4.1. Use provided hose marked MAP sensor and connect to port on side of supercharger adapter plate
51.5. Attach provided bypass valve hose to boost port on side of supercharger adapter plate
51.6. Attach provided hose to heater AC line and 5/32” vacuum port on supercharger flange
51.7. Attach provided hose to cruise control line and 5/32” vacuum port on supercharger flange
52.

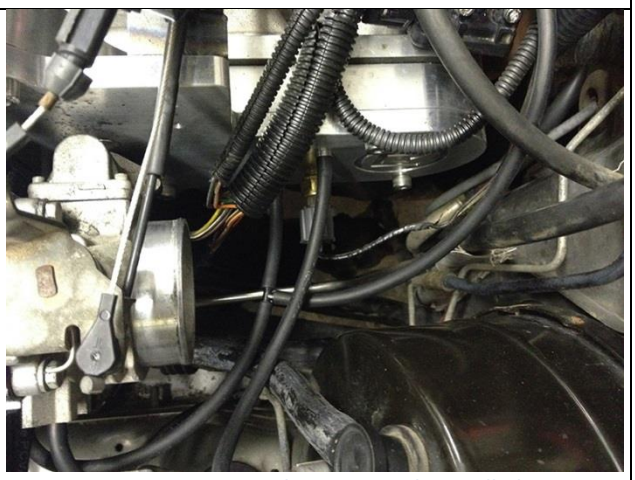


Figure 80: Vacuum hoses properly installed.

52.1. After all hoses are connected engine should look similar to Figure 81

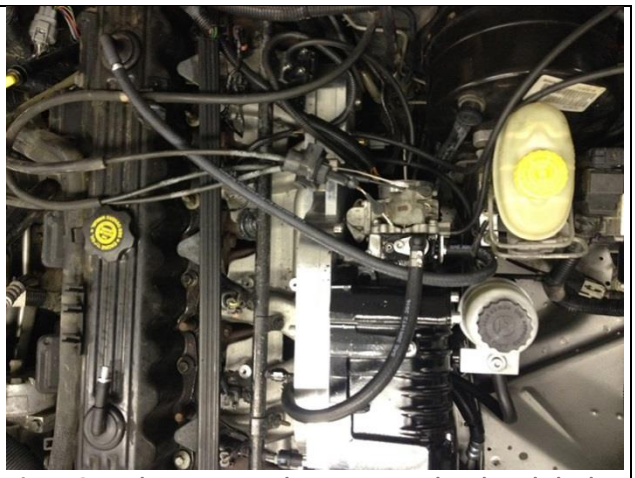


Figure 81: Valve cover vent hose connected to throttle body.

53. Unbundle wiring loom to allow greater distance between Throttle body, MAP sensor and IAT sensor
    - 53.1. Be very careful not to damage wires and check all wires individually after unbundling for damage
    - 53.2. Remove wire loom from wire housing
        - 53.2.1. Use two flat head screwdrivers, one on each side to carefully lift top from tabs on lower portion
        - 53.2.2. Move from front to back on both sides at the same time
    - 53.3. Remove tape from wires starting at the end at the TPS connector
    - 53.4. Keep removing tape till you unwrap 3" past large teed shown in Figure 82 that was inside wire housing

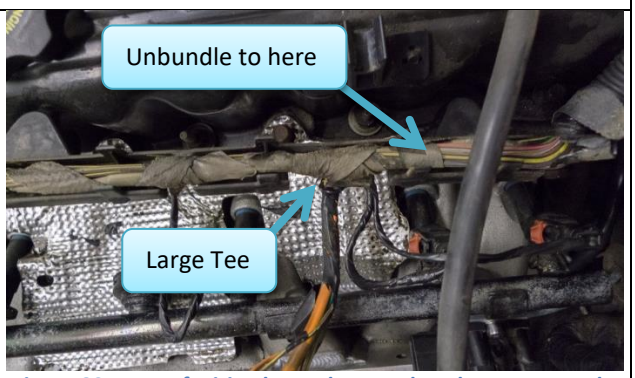


Figure 82: Area of wiring loom that needs to be unwrapped.

53.5. When you have unwrapped the loom enough it should look like Figure 83

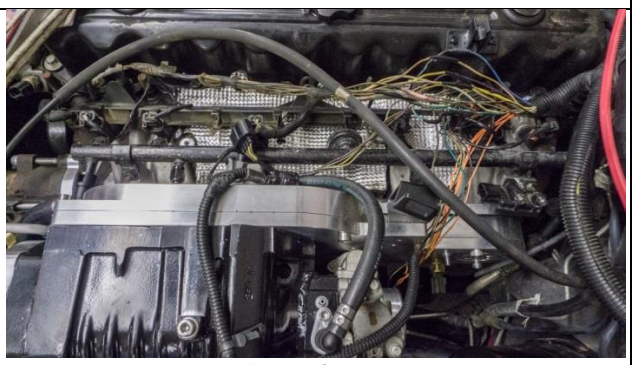


Figure 83: Wiring loom after unwrapping wires.

53.6. Pull wire loom towards driver side through tie down on passenger side or valve cover next to firewall (Figure 84)

Figure 84: Wire tie down may hold loom too far toward passenger side for throttle body wire connection.

53.7. Connect TPS connector ensuring it is not strained
53.8. Connect MAP sensor wire
53.9. Tape up wires into bundles based on where they go
  53.9.1. Tape up TPS and MAP wires by themselves with electrical tape
53.10. Cover wires with sheathing to protect them from abrasion
  53.10.1. Tape over sheathing with electrical tape
  53.10.2. When completed wires should look similar to Figure 85 and Figure 86

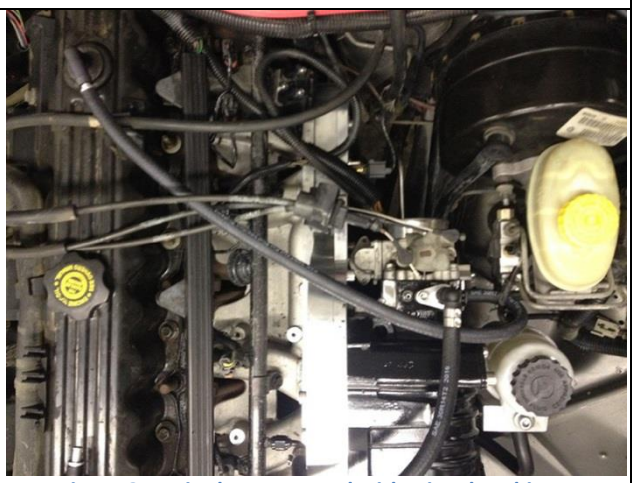


Figure 85: Wire loom covered with wire sheathing.

53.11. Place wire loom into wire housing and snap top on both sides
  53.11.1. Ensure top is snapped in and fully seated all around

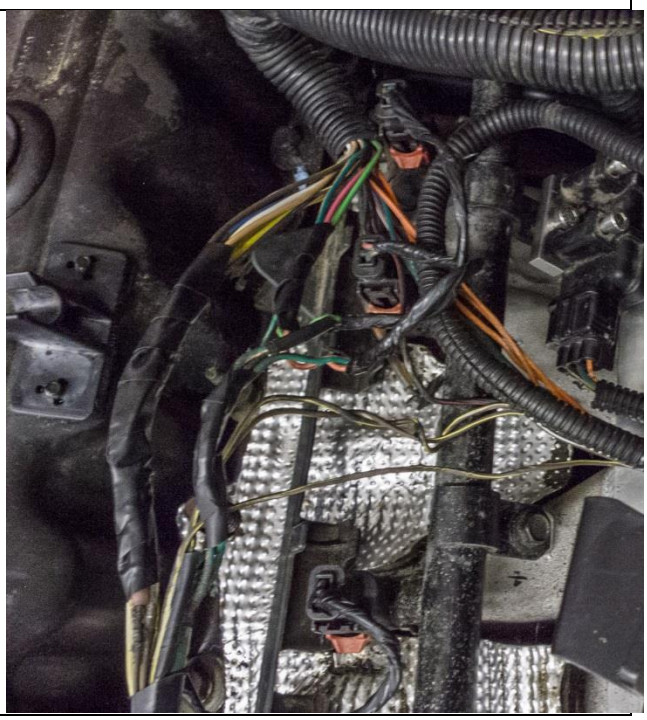
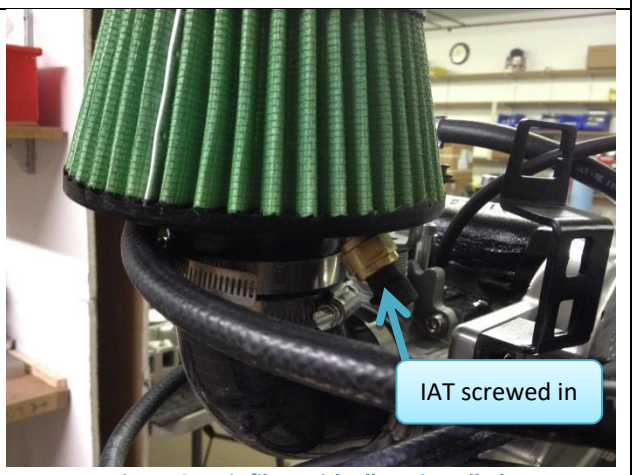
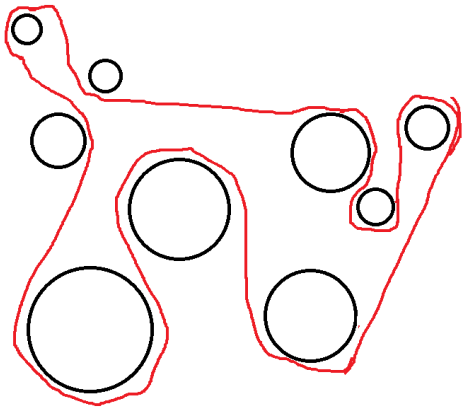
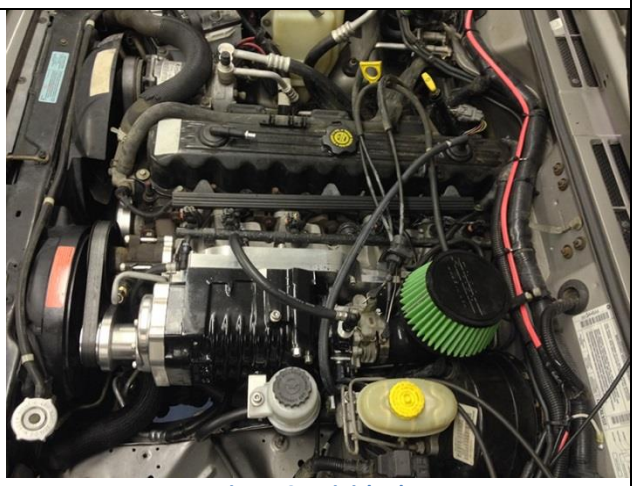


	Figure 86: Wire connectors all connected.
54. Reconnect fuel injector wires 54.1. Two wires per injector all have one DG/OR (Dark green orange tracer) 54.2. Fuel injector wire colors for each injector in order from front to back of engine 54.2.1.1. Injector 1 (Front of engine) - WT/DB (White with dark blue tracer) 54.2.1.2. Injector 2 - TN (Tan) 54.2.1.3. Injector 3 - YL/WT (Yellow with white tracer) 54.2.1.4. Injector 4 - LB/BR (Light blue with brown tracer) 54.2.1.5. Injector 5 - PK/BK (Pink with black tracer) 54.2.1.6. Injector 6 (Back of engine)- LG/BK (Light green with black tracer)	
55. Install air filter with elbow (SKIP if aluminum elbows were included in kit) 55.1. Slide elbow over throttle body 55.1.1. Ensure elbow is all the way on 55.1.2. Tighten all three hose clamps 55.2. Connect fresh air intake hose (provides filtered air to crank case) 55.2.1. Use provided 5/16th hose with metal insert marked fresh air intake 55.2.2. Attach side with metal insert to front elbow on engine valve cover 55.2.3. After installation air filter should look similar to Figure 87 56.	 Figure 87: Air filter with elbow installed.

57. Install air filter assembly if aluminum elbows were included with kit 58. Referrer to Figure 88 to install air filter assembly	 Figure 88: Air filter with aluminum elbows.
59. Install IAT sensor 60. Insert the IAT into a piece of rubber hose the diameter of the threads which is about 3 in. long 61. Make sure the threads are fully covered by the hose 62. The IAT is ideally located where: 63. The wire connector reaches 64. The sensor will not get too hot while the engine is running (<100°F) 65. Water and dirt will not get on the sensor or inside the rubber hose covering the sensor 66. Use two zip ties to secure the IAT sensor 67. One location is at the bottom of the wire loom behind the throttle body	

68. Install provided serpentine belt for XJ 69. Route belt like stock on passenger side of engine 70. An example of belt routing with AC is shown in Figure 89 71. Tension belt with rotating disc 72. Slightly loosen both bolts on disc 73. Use a 14mm socket or wrench on center nut to tension belt by rotating it counter clockwise 74. While holding tension on belt, tighten both bolts on disc to 30-40 Nm (22-30 lb-ft) 75.	 Figure 89: XJ & MJ Belt routing with AC.
76. Install provided serpentine belt for WJ 77. Route belt like stock on passenger side of engine 78. Release tension on dynamic tensioner by inserting a socket in the square hole and rotating clockwise 79. An example of belt routing with AC is shown in Figure 90Figure 89 80.	 Figure 90: WJ Belt routing with AC.
81. Check all bolts are tight, wires are connected, hoses are connected, and all steps in instructions were completed	
82. Clean battery terminals, reconnect positive terminal and tighten nut	
83. Check for fuel leaks again by switching key to on for several seconds to pressurize fuel system 83.1. Do not start engine till sure no fuel leaks are present	
84. Power steering initial operation 85. Add MOPAR power steering fluid or equivalent till fluid is between both lines on outside of reservoir	

86. Start engine and run for a few seconds, then turn off 87. Check fluid level and add as necessary 88. Repeat above steps till fluid level stops dropping 89. Start engine and slowly turn steering wheel from lock to lock 90. Stop engine and check fluid level again and add if necessary 91. If the fluid is milky or very foamy, let vehicle stand for a few minutes, then repeat above steps 92. Foamy fluid can damage a pump if vehicle is run for a prolonged period	
93. All done	 Figure 91: Finished

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: 2019-01-25