



FORD FALCON BA-BF V8
5.4L 4V (2002-2008)

**VORTECH CRANK DRIVE
SUPERCHARGER KIT
INSTALLATION MANUAL**

For any further technical information contact:

Centrifugal Air Pumps Australia Pty Ltd
20 Verrall Cres, Berri SA 5343, Australia
Email sales@capadrift.com.au
Phone 08 8582 3499 (Intl. +61 8 8582 3499)

INTRODUCTION

Congratulations on selecting the best performing and best backed automotive supercharger available today. Before beginning this installation please read this instruction booklet thoroughly.

CAPA Supercharger Systems are a performance improving device. This product is intended for use on healthy and well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine and or the supercharger. CAPA IS NOT RESPONSIBLE FOR ANY DAMAGES RESULTING FROM THE USE OF THIS KIT.

For best performance and durability please take note of the following key points:

1. Use minimum of 96-98 RON unleaded fuel
2. The engine must have stock compression ratio.
3. If the motor has been modified in any way, check with CAPA prior to installation.
4. Change your oil and oil filter. Refill with the best synthetic oil available.
5. Check that all components of the ignition system are in top condition.
6. Cold Starts - never race your engine when your engine is cold. Allow water temperature to rise up to operating range before driving above 2500 r.p.m. Engine damage may result in high r.p.m. and boost conditions when cold.
7. Always listen for signs of deterioration (pinging) and discontinue hard use (no boost) until the problem is resolved.
8. Change oil and oil filter every 5,000km. **OVER FILL OIL BY 1 LITRE WHEN KIT IS FITTED.**
9. Always use an air-filter.
10. Never strike the supercharger pulley with a hammer or other tools. (Evidence of such force will void warranty).
11. Retention belt after 500-600km, if not sooner, because the belt will stretch during initial brake in period. Tighten belt only enough to stop slippage (the belt must still have some flex), over tension of the belt is the cause of input bearing failure
12. Never over-rev supercharger. Internal step up on a Vortech V-3 Supercharger is 1.0 to 3.60. Impeller speed must not exceed 50,000r.p.m (**Sealed Vortech**).

Impeller speed calculated as below:

Vortech V-2 / V-3 Supercharger

$$\frac{\text{Crank Pulley Diameter}}{\text{Supercharger Pulley Diameter}} \times 3.60 \times \text{Engine RPM} = \text{Impeller Speed}$$

NOTE: The reason for grooved belts to move over one or more grooves or come off completely is always due to an alignment problem. Mis-alignment, can also be caused by over-tightening of the belt - which may damage the drive same.

GLOSSARY

COMPRESSOR HOUSING

The housing, which makes up the enclosure portion of the compressor. Also referred to as the volute, scroll or snail.

COMPRESSOR SURGE

The phenomenon that occurs when the pressure ratio is too high for a given flow, or impeller speed. All centrifugal compressors can experience it. In automotive use it is most often found during decelerations when the engine speed is still high and the throttle is closed.

DETONATION

The uncontrolled rapid expansion or explosion of the air/fuel mixture in the combustion chamber.

GAUGE PRESSURE

The measure of pressure above atmospheric pressure.

IMPELLER

The bladed wheel inside the compressor housing that accelerates the air.

INDUCER

The air inlet portion of the compressor.

NATURALLY ASPIRATED

An engine without a supercharger.

PRESSURE, BOOST

The difference in pressure between barometric and intake manifold absolute pressure on a supercharged engine (read as gauge pressure).

PRESSURE, ABSOLUTE

The sum of gauge pressure and atmospheric pressure. One standard atmosphere = 29.92 in. of mercury (Hg) = 14.696 lbs./in.² (psi)

PRESSURE RATIO

Manifold absolute pressure divided by standard barometric pressure.

$$P.R. = \frac{\text{gauge pressure} + \text{atmospheric pressure}}{\text{absolute pressure}}$$

STOICHIOMETRIC

The correct chemical mixture of air and fuel to yield complete combustion.

KITS PARTS LIST

	Quantity	Checked
OIL FEED & DRAIN SUPERCHARGER ASSEMBLY:		
Vortech Supercharger unit Curved V2 (Non Intercooled Only)	1	
Vortech Supercharger unit Curved Forward V2 (Intercooled Only)	1	
500kW Only , T-Trim Option Curved Forward (Intercooled Only)	1	
Oil Outlet, Straight Barb (Non-Intercooled Only)	1	
Oil Outlet, 90 Degree Barb (Intercooled Only)	1	
Modified Dipstick Tube BAT6754A	1	
Vortech Oil Feed kit with 2 x 90 degree Fitting at Supercharger	1	
Vortech Feed Line Conduit 13mm x 700mm	1	
500mm x 1/2" Oil Drain hose	1	
500mm x 20mm Conduit	1	
8-22mm Hose clamps	2	
Vortech Air Assist kit	1	
SEALED SUPERCHARGER ASSEMBLY		
Vortech V-2 Sealed, Special Outlet, Pre-Filled Special Lubricant, 180cc	1	
Supercharger Surge Oil Bottle & Fittings	1	
Oil Bottle Bracket plus 6mm self tapper bolt	1	
250mm Blue Oil Feed Line	1	
11-13 Clamps	2	
PULLEY/BELT COMBO:		
3.8 - 3.7 x 180mm = 1725 Belt	—	
3.6 - 3.47 x 180mm = 1715 Belt	—	
3.33 - 3.15 x 180mm = 1700 Belt	—	
2.95 x 180mm = 1675 Belt	—	
3.6 x 205mm = 1760 Belt	—	
3.33 x 205mm = 1755 Belt	—	
3.15 x 205mm = 1745 Belt	—	
Supercharger pulley 3/8 x 1-1/4NF bolt, spring washer & retainer	1	
MOUNT / DRIVE SYSTEM:		
3/8" x 1.5" UNC cap head bolts	5	
Supercharger aluminium Mount Bracket	1	
Mount bracket bolts 8M x 110mm, spring, flat washer	3	
Mount bracket spacer 38mm x 25mm	1	
Mount bracket spacer 45.5mm x 25mm	2	
Double bearing idler pulley (flat) Alum, LS1+8mm Spacer	1	
Idler pulley mount bolt M12 x 45mm	1	
Idler pulley dished washer 12mm Ø	1	
Idler pulley spacer 6mm x 12mm Ø	1	
12mm Shimmed washers	6	
Tensioner Pulley Double bearing (flat plastic)	1	
Tensioner pulley mount bolt 2" x 7/16"NF	1	
Tensioner pulley dished washer 7/16" Ø	1	
7/16" Shimmed Washers	6	
Eccentric Tensioner 1-1/2" Total Height	1	

Parts List continued on Next Page...

KITS PARTS LIST, CONTINUED

	Quantity	Checked
MOUNT / DRIVE SYSTEM (Continued):		
Tensioner to bracket mount bolt ½" x 1-1/2" NF, spring washer	1	
8 rib Aluminium Crank pulley	1	
Small Tube Master gasket	1	
Crank pulley retainer bolt M10 x 25mm, spring & flat washer	3	
Bottom Radiator hose angle (Short 90 degree)	1	
Radiator hose Joiner 69mm x 44mm	1	
33-57mm Hose clamps	3	
Bottom radiator Hose Support bracket	1	
39mm Rubber lined D saddle	1	
M6 x 20mm Bolt, spring, flat washer and nut	1	
Power Steering Hose Conduit, 300mm x 25mm	1	
Power Steering Hose Conduit, 300mm x 19mm	1	
Large Cable Ties	2	
AUTOMATIC TENSIONER DRIVE SYSTEM (OPTIONAL)		
Automatic Tensioner Assembly w/Countersunk Housing	1	
22mm Chamfered 2 Piece Spacer Assembly	1	
100mm x 10mm Allen Head Bolt	1	
25mm x 8mm Countersunk Bolt	1	
50 x 10mm Bolt (Idler Pulley to Tensioner Assembly)	1	
10mm Spring Flat Washer and Bearing Spacer	1	
17mm Shim	3	
AIR DISCHARGE: (SUPERCHARGER OUTLET)		
Supercharger to Aluminium air duct 55mm x 76mm Silicon Tube	1	
Aluminium Tube with Grommet	1	
65 -89mm hose clamps	4	
Modified 90 degree Rubber angle (One end less 25mm)	1	
By-Pass Valve	1	
1000mm 1" By-Pass Valve tube	1	
1000mm 4mm Vacuum Hose	1	
By-Pass valve sock and tie	1	
Plastic Ties Large	6	
AIR INLET: (STARTING AT SUPERCHARGER)		
Convolutd Intake Tube, 3.5" x 1000mm	1	
500kW option only , Convolutd Intake Tube, 4" x 1000mm	1	
89 - 104mm hose clamps	3	
500kW option only , 104-106mm hose clamps	3	
PCV Breather fitting 12.5mm (to inlet tube)	1	
One Way Valve, PCV Type Low Pressure	1	
8-22mm Hose clamp	1	
400mm Breather hose (flared one end)	1	
3.5" Air Filter mount Rubber angle 45° x 3" with sleeve inserts	1	
K&N Filter Element	1	
500kw option only , 4" K&N Filter	1	
500kw option only , 4" Filter to Convolutd Hose Joiner Sleeve	1	
Air Filter low Warning sticker	1	
M6 Counter-sunk Allen head bolt	1	

Parts List continued on Next Page...

KITS PARTS LIST, CONTINUED

	Quantity	Checked
FUEL MANAGEMENT - NORMAL:		
Optional – 30lb Injector Upgrade for XR8 (Non Flash Tuner Only)	8	
Note: GT / GTP 30lb Injector Upgrade Mandatory		
Fuel Management Unit (10:1)	1	
Curved FMU Fittings	2	
1200mm x 8mm EFI Hose (FMU)	2	
1200mm x 16mm Conduit	2	
12 - 14mm fuel hose clamps (FMU)	6	
Self Tapping/Drilling Screws	2	
1000mm x 4mm vacuum hose	1	
4mm Brass T Piece	2	
Premium Unleaded & Synthetic Oil Only Stickers	1	
T-Rex Fuel Pump	1	
Fuel Pump mount bracket	1	
Fuel pump D mount saddle	1	
Pump Insulation Wrap	1	
One-Way Valve	1	
5/16" Barbed T-Piece	2	
50mm x 5/16" EFI hose and protective Conduit	2	
150mm x 5/16" EFI hose and protective Conduit	2	
70mm x 5/16" EFI hose and protective Conduit	1	
600mm x 8mm EFI hose and protective Conduit	1	
Fuel Hose Clamps 10-12mm	12	
M5 x 15mm Bolts, nut spring and flat washer	2	
Plastic Ties (medium)	10	
FUEL MANAGEMENT – BOSCH UPGRADE:		
Bosch 044 Fuel Pump w/-8 Inlet and Discharge Fitted	1	
One-Way Valve	1	
One-Way Valve Saddle and Screw	1	
3/8 Barb Tee, 5/16 90 Degree Outlet	2	
200mm x 5/16" EFI hose and protective Conduit	2	
1400mm x 10mm EFI hose and protective Conduit	1	
Fuel Hose Clamps 14-16mm	10	
Fuel Hose Clamps 12-14mm	4	
Plastic Ties (medium)	10	
Silver Insulation Sheet	2	
3/8 High Flow Fuel Filter	1	
1200mm x 3/8 Steel Tube	1	
3/8 Steel Tube Saddle	4	
Self Tapping Screws	6	
Plastic Ties (medium)	10	
FUEL MANAGEMENT – INJECTOR / REGULATOR COMBINATION		
8psi - 10:1 Reg, T-Rex Fuel Pump, Standard Injectors – XR8 (All)	—	
8psi - 10:1 Reg, T-Rex Fuel Pump, 30lb Inj. – GT, GTP (Non Intercooled)	—	
8psi - 10:1 Reg, Bosch Fuel Pump, 30lb Inj. – GT, GTP (Intercooled)	—	
9psi - 8:1 Reg, 36lb Injectors – Special Application	—	

Parts List continued on Next Page...

KITS PARTS LIST, CONTINUED

	Quantity	Checked
ELECTRICAL SYSTEM:		
Fusible link double wire	1	
M5 x 15mm bolt, nut, spring and flat washer	1	
Relay, Base & mount screw (refer water injection kit)	-	
2000mm of 10mm ID Conduit	1	
2000mm 2 core wire (fuel switch)	1	
2000mm of 6mm ID Conduit	1	
2500mm red 5mm wire (fuel pump)	1	
Female terminals	2	
8mm eye terminals	1	
5mm eye terminals	2	
6.3mm eye terminals	2	
Piggy back controller	1	
Scotch Locks	2	
Blue hole Terminal & Self Taper (earth)	1	
Fuel Pressure switch in T piece (refer to water injection kit)	-	

Important before beginning installation, verify that all parts are included in the kit - report any shortages or damaged parts immediately.

PREPARATION & PART REMOVAL

1. Disconnect Battery.
2. Remove Engine Cover.
3. Remove air cleaner box & ducting.
4. Remove Air Box Mount bracket assy. (Drill rivets)
5. Remove Spark Plugs
6. Remove Power-steering fluid reservoir (Drain and keep fluid)
7. Drain Coolant system. (keep fluid)
8. Remove cooling fan assembly.
9. Remove Radiator hose support bracket.
10. Remove Bottom radiator hose. (engine clamp side)
11. Remove Front Grille.
12. Remove front Bumper assembly.
13. Remove Passenger side headlight.
14. Remove oil light switch
15. Remove dipstick tube (**NOTE: Ensure that your dipstick is part no: 8912 6750-AC, if your dipstick is different, please contact CAPA.**)

SPECIAL TOOLS

- dyno or use of
- accurate air fuel ratio meter
- boost gauge
- fuel pressure gauge
- fuel return gauge
- long straight edge

FUEL SYSTEM ENHANCEMENT

NOTE: If kit is modified in the future with the understanding that it violates supercharger warranty, these are the recommended fuel system changes.

- Option 1: 4-5psi Tune with Flash Tuner. **Optional** 2 bar map / tune.
- Option 2: 6psi 36# Injectors, Tune with Flash Tuner. **Optional** 2 bar map / tune.
- Option 3: 7psi 42# Injectors, Tune with Flash Tuner. **Optional** 2 bar map / tune.
- Option 4: 8psi 42# Injectors, Mini T-Rex Fuel Pump with Flash Tuner. **Optional** 2 bar map / tune.
- Option 5: 9psi 42# Injectors, T-Rex Fuel Pump, Vortech FMU, Flash Tuner. **Optional** 2 bar map / tune.
- Option 6: 10psi 42# Injectors, Bosch 044 Fuel Pump, Vortech FMU, Flash Tuner. **Optional** 2 bar map / tune.
- Option 7: 10psi+ 42# / 60# Injectors, Bosch 044 Fuel Pump, Vortech FMU.
Optional 2 bar map / tune. Fuel Cell & Bosch 413 Fuel Pump.

INSTALLATION

1. Check Spark Plugs, replace with NGK BPR6EF, gapped to 1mm if required.
2. With bottom radiator hose out of the way, fit new crankshaft pulley assembly. Tension to 44lbs. Using three M10 x 25mm bolts provided, smear Master gasket supplied on threads and tension accordingly.



PHOTO 1

3. With radiator hose removed fit right angle hose and join with joiner supplied to original hose, route the hose down and under the crankshaft pulley, using clamp and bracket provided, fit straight bracket to hold the hose behind the crossmember. Remove original hose support bracket. Secure hose to bracket with saddle supplied. Ensure supercharger belt or crankshaft pulley have ample clearance. (**See Photo2**)



PHOTO 2.

4. **OIL FEED AND DRAIN KITS ONLY** - With oil light switch removed, fit 'Y' adaptor at oil light switch, route hose towards, where supercharger will be situated. *Fit Dipstick tube provided (**NOTE: Ensure that your dipstick is part no: 8912 6750-AC, if your dipstick is different, please contact CAPA**), use clamps to secure hose (**See Photo 3**) *If Automatic Transmission, Route Supercharger Drain Hose In Front of transmission cooler pipes.* *Fit Drain Hose to Supercharger first before fitting supercharger into bracket.

Air Assist Installation

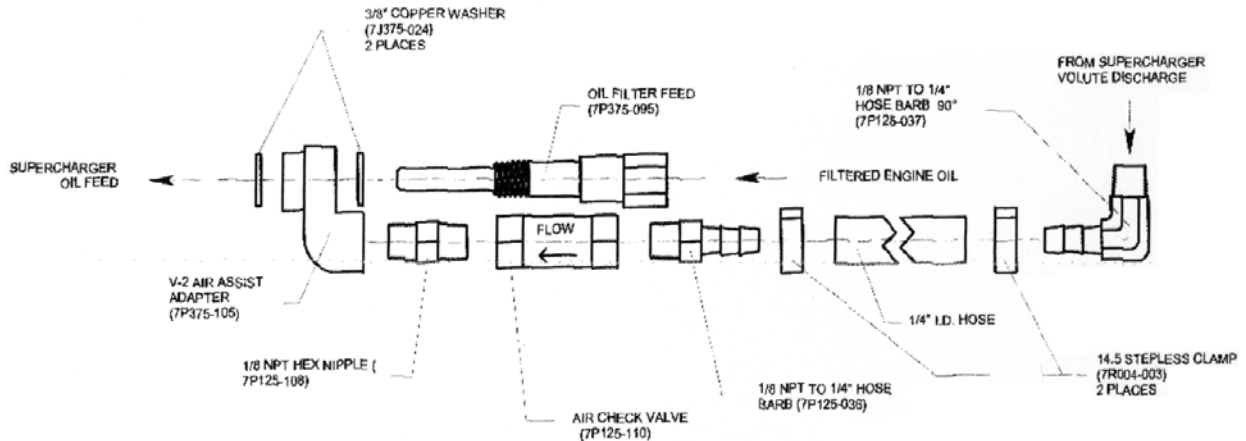


PHOTO 3.

- 5 *Supercharger should have inlet pipe also fitted to supercharger when installing to bracket. *Relocate ABS wire to front of left hand inner guard and down along chassis rail. *Relocate main wiring loom, now clips behind and through headlight hole to new position through headlight hole alongside air-conditioning pipe above chassis rail. **OIL FEED AND DRAIN KITS ONLY** Ensure air assist is fitted to supercharger, use drawing to ensure correct installation.

6. **SEALED SUPERCHARGER KITS ONLY:** With supercharger in position connect supercharger oil reservoir in position as shown in photo using self tapping screws supplied.



7. Modify water injection / washer bottle as per "Water Injection Manual". (See Photo 4)

NOTE: You may wish to complete water injection fitment now or continue the main installation and finish water kit later.

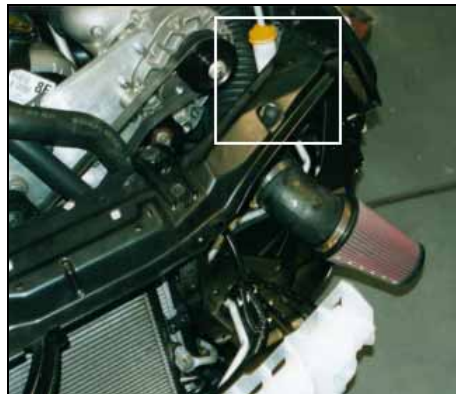


PHOTO 4.



PHOTO 4a

PHOTO 4b

OPTIONAL: You may wish to fit an auxiliary water washer bottle and remove original washer bottle. Then air filter tube will go through hole indicated by circle on photo 4b. You may have to enlarge the hole to make this possible. This will be less restrictive than running inlet under headlight.

8. Fit Air filter tube in position along inner wheel arch, down through headlight hole. Replace support bolt on bracket mounting air con line near the inspection/fill port on air-con line, with 6mm counter sunk bolt provided (thus stopping bolt from protruding into intake tube). You will have to bend air conditioner Aluminium tube up above air filter tube and slightly compress tube to fit between supercharger and inner guard (**See Photo 4a**). Fit PCV breather fitting in into filter hose, then secure PCV hose with clamp provided. (**See Photo 5**). After fitting to supercharger trim to correct length, fit rubber angle and K&N Filter pod. (**See Photo 6**)

NOTE: Fit inlet tube to supercharger when supercharger / bracket is in position, but not secured.



PHOTO5



PHOTO6

9. With cam sensor plug from cylinder head removed, make a decision whether you wish to extend wires or remove insulation tape to lengthen plug loom to suit. Ensure plug and loom go through hole in bracket before the bracket is mounted.

NOTE: Space Bracket to ensure bracket does not rub against tappet cover. This will cause a vibration noise through the car.

Shown below is photo of bracket, description of all mounting points.

- A Engine mounting point – Use spacer 45.5mm
- B Engine mounting point – Use spacer 45.5mm
- C Engine mounting point – Use spacer 38mm
- D Automatic Belt Tensioner Mount Points
- E Gilmer Drive Only – Idler Mounts (Steel Bracket Only)



10. Remove the three bolts on the front cover of the engine, that co-inside with the bracket fitment and secure with M8 x 110mm bolts provided. Two different length spacers are provided, 45mm & 38mm (See diagram above).

Put Supercharger unit into position (inlet tube connected) slot bracket into supercharger put two bolts in supercharger unit, 1¼ x 3/8NC cap bolts (leaving loose). With spacers and bolts mentioned above, secure bracket to front of engine (nip bolts up don't tension). Fit remainder of supercharger to bracket bolts and nip up.

NOTE: Position scroll on supercharger, by loosening tabs and rotating housing, this may already be done for you. (**See Photo 5**) Ensure this is done before supercharger is put in place.

11. Check blower pulley is running true with crank - shaft pulley. With a long straight edge, check that the blower lines up with the crankshaft pulley. Check that the blower is on the same vertical tilt angle as the crankshaft pulley, you can use a fishing line with a weight on the end of it to check this. Position the car so that the vertical tilt line is square with the crankshaft pulley. Check this against the blower pulley to make sure that the blower and bracket are at the same vertical tilt angle. Check against other pulleys if possible just for your own reference that you are measuring vertical. Check the measurement from straight edge to the first pulley groove on the crankshaft pulley, it must be the same on the blower pulley. Take this into consideration when adjusting the idler pulleys as well. Re check alignment after tightening all bolts.

NOTE: If unsure call for assistance, this is important. If you don't get this right, the belt will move on the idler pulley when you rev up the motor underload above 3500rpm.

12. Fit Flat idler pulley to supercharger middle of three threaded post, fit eccentric tensioner assembly to bracket, ensure both idler and tensioner are in alignment. Fit the blower belt provided. Tension belt idler pulley only. Tension belt tightly enough to eliminate slippage. Re-tension the belt after 500km. Do not over tighten the belt. **(See Photo 7)**

Automatic Tensioner Option

With Automatic Tensioner option the manual tensioner is not used, the new position for the tensioner is shown in a photo below. The 22mm Spacer Provided will need some machining to chamfer, this counteracts for any deflection of the tensioner to ensure the idler pulley tracks perfectly. In some cases you may wish to shim under spacer, a spacing is generally needed in the area shown in the photo by an arrow.



NOTE: Check belt for clearance to cooler hoses under belt.

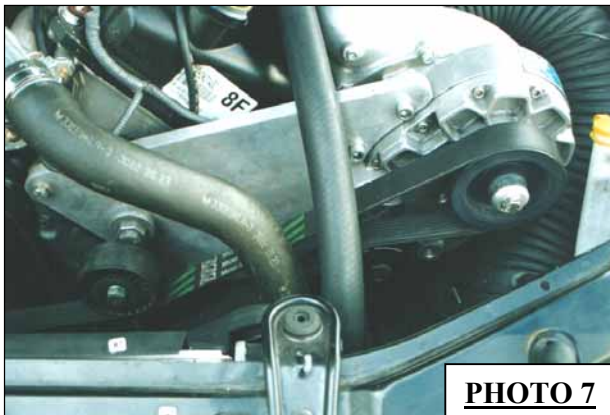


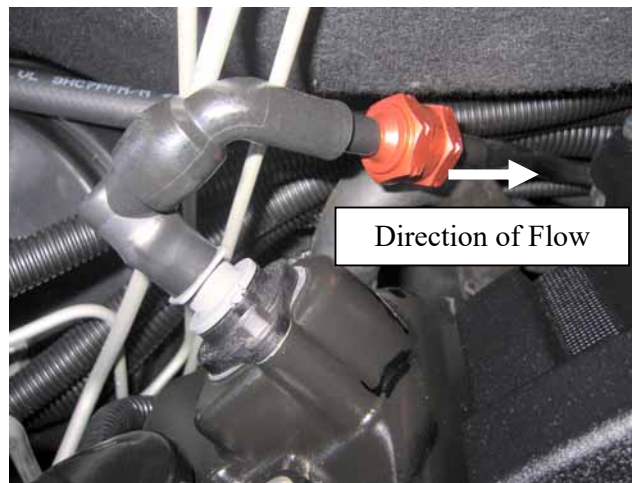
PHOTO 7



PHOTO 7a

13. To recheck that all pulleys lines up. Later, wind the motor over, then start the motor. Let idle and check. Then rev up motor to check if the belts walk off the pulleys. **Do this task at the end of the fitment tasks. Continue checking the belt during breaking in procedure and complete the rev up test at the end of the breaking in procedure. Before road test review the final checklist.**
14. Refit Engine cooling fans, re-route power steering hoses, cutting both ends off hoses and secure to cooling fans. Fit conduit over hoses before securing **(See Photos 1&2)** Refit Power steering reservoir and refill.

15. Fit Discharge pipe with rubber joiner and angle supplied. Use clamps supplied to secure. Ensure 90 degree rubber angle at throttle body is fitted to throttle body with short end to throttle body. Rubber hose should not contact computer bracket. Cut Strut Stud Tip to ensure it doesn't rub through throttle body tube.
(See Photo 5 and 7a)
16. Connect the blow-off valve to the Aluminium tube. Connect Blow-off valve to 25mm Blow-off tube supplied. Route Blow-off valve hose over bracket and down towards chassis rail fitting foam sock on end with plastic tie. Ensure hose has plenty of clearance, so it will not run on top of supercharger drive belt. (Use plastic ties to secure tube where required.)
The sock reduces blow-off valve noise on deceleration/idle, when valve is open.
17. Source vacuum/boost reference from line going to std fuel regulator, using T-piece and 4mm hose supplied for Blow of valve. Route around front of engine, towards brake master cylinder, this will provide reference for FMU and water injection switch. Clamp all ends with fittings supplied.
18. Connect new crank-case breather hose from intake tube to original breather hose. Use connector at intake hose and original joiner on original hose **(See Photo 5)**
Using one way valve provided, fit to pcv valve on driver's side, cut plastic hose and push one way valve into plastic hose, will lock in. This will stop boost pressurising sump.
Danger: Do not mix this one way valve with fuel pump one way valve. They look the same, but have different internal valve.



19. With air filter in correct position, as per **(Photo 4&5)** and water injection installation complete, refit headlight, bumper bar and grille.

PRECAUTION: The air filter is mounted in this position to ensure that it collects the cold air without being effected from engine bay temperature. You will notice that its position is lower on the car than original mounting position. Take this into consideration when attempting water crossings in extreme conditions the possibility exists of WATER ENTERING THE INTAKE. ENSURE ALL DRIVERS ARE AWARE OF THIS POSSIBILITY AND TAKE NECESSARY PRECAUTIONS

20. Mount CAPA pump beside inlet manifold, behind throttle body, with bracket provided, as indicated in (**Photo8 & 9**). Mounting to tappet cover bolt under idle motor. Ensure rubber insulation wrap is fitted to pump prior to clamping and no part of pump will chafe. See Drawing Below for pump/hose layout.

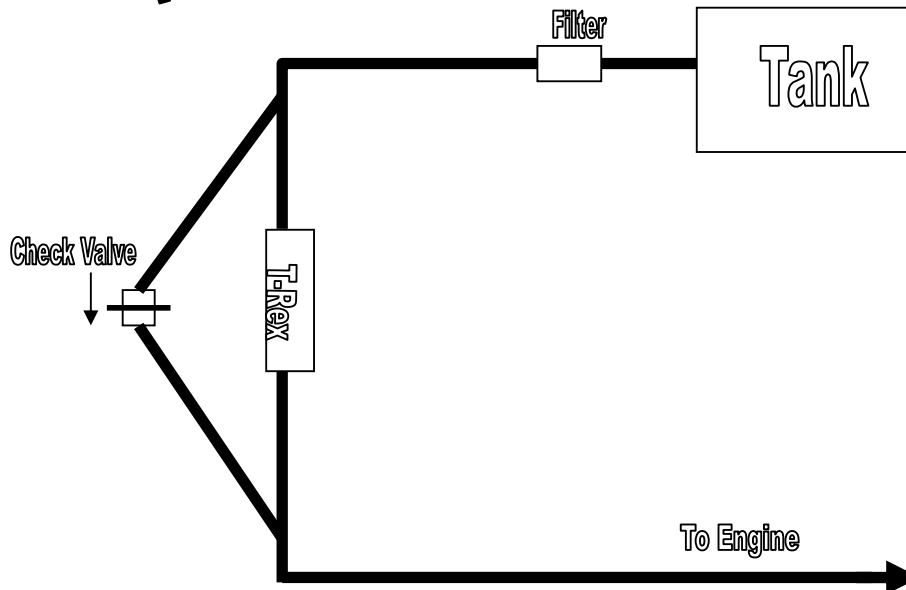


PHOTO 8



PHOTO 9

Fuel System Fitment Diagram

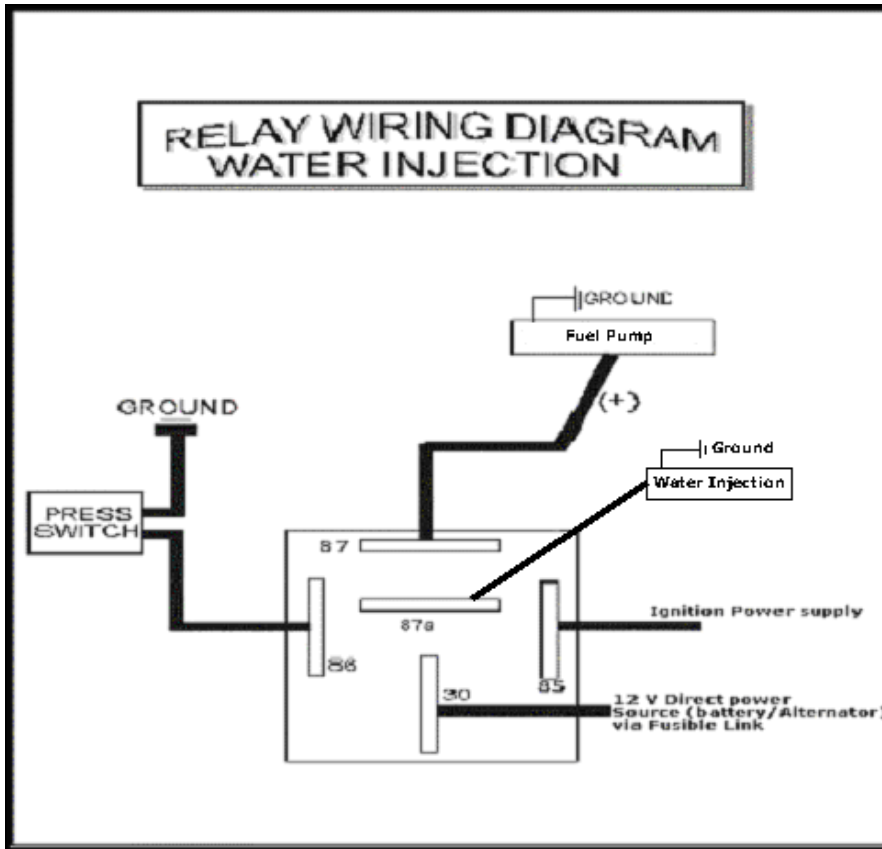


NOTE: The secondary pump increases flow and pressure as the original system becomes inadequate, the secondary pump needs to be switched on at around 2.0psi, this also activates the water injection off the one switch. When clamping fuel hose, spray hose with CRC to ensure clamps do up with out pinching fuel hose.

Bosch Pump Upgrade

For GT or High Output, an optional 044 Bosch fuel pump is supplied. This pump is fitted in a different position to the T-Rex pump. The fuel filter clamp now clamps the fuel pump to the chassis and the fuel filter is now located near the fuel rail. Part of this process requires removing the fuel pump assembly from the tank, breaking out the one way valve located at the bottom of the fuel pump bowl, and opening the orifice by 1.5mm. Ensure no plastic swarf is left behind. Refit the pump assembly replace original 5/16 tube from fuel tank to fuel pump with flexible 3/8 hose provided. Replace 5/16 steel tube from pump to engine with 3/8 steel tube provided. Fit fuel filter and connect to fuel rail. Assemble pump and one way valve as shown in photo. One way valve must flow forwards from tank to engine. Ensure wiring earth is screwed securely so not to come loose and seal with silicon to keep connection dry and free of corrosion. Cover fuel pump and tubing from pump to engine with silver insulation provided, this is a must to ensure reliability. In most cases when this option is utilized injectors are usually replaced. Ensure injector o-rings are lubricated when fitted into fuel rail. New injectors will not have a positioning slot, position injectors in rail in conventional fashion, they will not move once rail is clamped down. Ensure all electrical connectors are clicked in properly.





21. Mount relay near fuse box and wire using the 6mm red wire provided, run the wire from the pump to the relay fuel pump as per above diagram.

Test fuel pump system to ensure it maintains adequate flow and pressure at top boost, do this test with hot fuel and headlights on high beam.

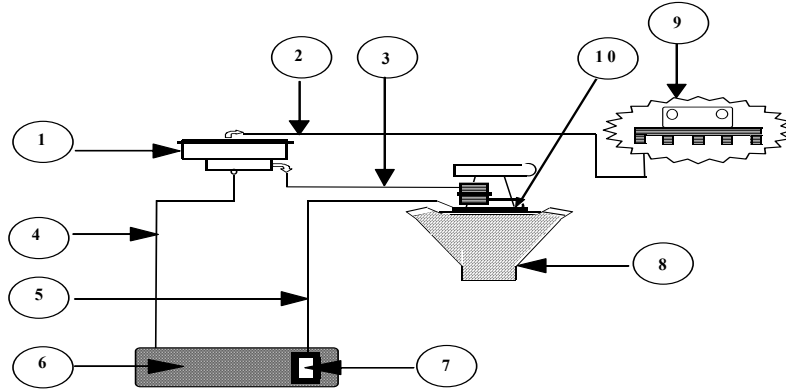
NOTE: Fuel systems runs under high pressure, check all clamps and tighten, check hoses are in good condition or replace. **This fuel system has no fuel return line.**

22. Fit FMU near brake booster, as per **(Photo 10.)** Route hoses under booster, around back of engine, and connect to return system, as per diagram next page. Cut plastic section out between firewall and engine, and discard. Double clamp and conduit hoses. Ensure hoses are not too long and are secured to prevent any vibration noise on firewall etc. Connect vacuum tube to same source as discussed previously for Blow-off valve and pressure switch.



PHOTO 10

FMU FITTMENT DIAGRAM



ITEM	DESCRIPTION
1	FUEL PRESSURE CONTROLLER FMU
2	CONNECT TO MANIFOLD VACUUM/PRESSURE AT VACUUM TREE
3	INLET FUEL LINE INTO FMU SIDE FITTING FROM FACTORY REGULAROR
4	FUEL RETURN LINE TO FUEL TANK
5	FUEL FEED LINE
6	FUEL TANK
7	FUEL PUMP
8	ENGINE
9	VACUUM SOURCE
10	FUEL RAIL

23. Drain fuel tank and refill with Premium or Optimax fuel.
24. Refill engine coolant system. Also changing engine oil and filter with a good quality engine Oil. Start engine, let idle for 10 minutes, purge cooling system and seal. Checking for any water/oil/vacuum/power steering leaks
25. A Flash Tuner is required with this kit, available for purchase separately. Contact CAPA for more details.
26. While engine is running check that belts are running true (**Re - check steps 11-13**) and re ensure that all fittings are secured correctly and no leaks are present.
27. Review 'Breaking In' procedure.

WATER INJECTION

Water injection is available and has its benefits.

1. Maintaining a cooler intake charge due to the evaporation of water.
2. Reducing heat soak at blower and inlet manifold.
3. Added protection for detonation on extremely hot days.

BREAKING IN

Run motor at idle and fast idle for 5 to 10 minutes, do not rev up motor, then stop motor allow blower to cool for 10 minutes, then drive at no boost for approximately 10 minutes, not exceeding 3,000rpm, then allow blower to cool. Drive vehicle not exceeding 3,500rpm at no boost for approximately 100 to 150kms. This will ensure that the bearings and drive belt are run in before loading up the system by boosting. Always warm the motor - blower, before using boost. This will help in the life longevity of both the motor and blower. **Before driving, review the Final Check List. This procedure is very important and must be carried out to the letter.** Dyno tuning may only be done after this procedure is completed.

Do not dyno run car until the 100-150km has been driven.

GENERAL NOTES

It is the installers responsibility to dyno the car to check that all systems are working correctly, especially maximum fuel delivery and to check for any presence of detonation.

Check boost on dyno and that advertised boost is not exceeded and rpm occurs at designated rpm.

Have injectors cleaned and flowed. A must on used injectors, peace of mind on new injectors.

Make sure that all fuel hoses are in excellent condition, or replace. Check that all clamps are tight and that there are no fuel leaks.

The blower will have a sweet high-pitched whirring noise from the belt drive. As the blower goes through its running in time, the noise will slowly dissipate.

ENSURE ENGINE OIL IS OVER-FILLED BY 1 LITRE MORE THAN OE SPECS..

PRECAUTION: If the blower ever gets louder or starts to make an erratic noise or a noise through the intake tube, such as a air hissing noise, disconnect the blower belt and call CAPA for assistance and advice.

FINAL CHECKLIST

1. Carefully review the entire installation. Check oil and fuel lines near moving parts and the exhaust system to ensure that these lines are safe, secure and not twisted or kinked. All wires and hoses should be firmly secured with clamps or wire ties.
2. Check all fluid levels. Your vehicle should be filled with premium fuel before any driving. It is important that you performed an oil and filter change. If you did not do so before, it should be performed now before proceeding further.
3. Start engine and idle for a few minutes. Check your timing. You want to run as much timing as possible while avoiding detonation. It is better to lean on the side of less timing and no detonation!
4. Shut off your engine and check for fluid leakage, signs of rubbing parts, and other potential problems. Pay particular attention to fuel leaks, check by using CRC spray any vacuum leaks at base of injector.
5. Check nothing is near any hot spots.
6. Your vehicle should display a significant increase in performance when you step into the throttle, with no detonation, yet should maintain its previous driveability during daily driving. If this is not so, review your installation, then contact CAPA assistance.
7. For best performance and reliability, **always use premium or higher-grade fuel** and listen for signs of detonation. Back off throttle should detonation occur. With a properly installed supercharger and appropriate timing, detonation should not be an issue.
8. Never race your engine when your engine is cold. Allow the water temperature to climb into operating range for several minutes before driving above 2,500r.p.m. to ensure adequate oil lubrication.
9. Please review the maintenance and warranty sections within this owner's manual.
10. Please take special note; operation of vehicle without all sub assemblies completed and properly installed may cause failure of major components.
11. After road test or first hard drive, check belts are okay and running properly in their grooves. Check the tension of belt and retension if necessary.
12. **Re dyno after 2,000km's.**

WARNING

1. DO NOT ATTEMPT TO OPERATE VEHICLE UNTIL ALL COMPONENTS ARE INSTALLED AND COMPLETE. SUPERCHARGER KITS EXTRUDE A HUGE AMOUNT OF HORSEPOWER FROM A STOCK ENGINE THEY ARE NOT INTENDED FOR CONTINUOUS OR EXTREME PERIODS OF MAXIMUM POWER OUTPUT. IT IS NOT OUR INTENTION TO CREATE RACE PROVEN HORSEPOWER BUT LEISURE ENDURING SYSTEMS.
2. WARRANTY POLICY FOR 12 MONTHS, UNLIMITED KILOMETRES COVERS FAULTY COMPONENTS PROVIDED IN SUPERCHARGER KIT. POLICY DOES NOT INCLUDE LABOUR TO REPLACE FAULTY PARTS.
3. THE RESPONSIBILITY OF ADR COMPLIANCE AND INSURANCE FOR THIS KIT FITTED TO A VEHICLE THAT IS ROAD REGISTERED AND DRIVEN IS THE RESPONSIBILITY OF THE VEHICLE OWNER.
4. RESPONSIBILITY FOR CORRECT FITMENT OF THE KIT IS THE REponsABILITY OF THE FITTER.
5. DAMAGES TO VEHICLE OR SURROUNDS IS THE RESPONSIBILITY OF THE VEHICLE OWNER. PROVIDED THE KIT FITMENT IS CORRECT, ACCORDING TO THIS MANUAL.

GET OUT THERE & ENJOY...

