



**Brown Davis Automotive Pty. Ltd.**

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**NPF06A1**

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Last edited: 27/05/2015

## **Fuel Tank Part List and Installation Instructions**

TANK P/N: **NPF06A1**

NISSAN PATHFINDER R51 (mid 2005 on)  
110ltr AUXILIARY PETROL TANK

Item	Description	Quantity	Part number	P	C
1	TANK - AUXILIARY	1	NPF06A1		
2	HOSE – FUEL AND EMISSION - 8mm	1.4m			
3	HOSE – TMP - 16mm	1.0m			
4	HOSE – FILLER - 35mm	100mm			
5	HOSE – FILLER - 38mm	100mm			
6	HOSE – FILLER - 45mm	80mm			
7	HOSE CLAMP – STAINLESS - 8-16mm	6			
8	HOSE CLAMP – STAINLESS - 12-22mm	6			
9	HOSE CLAMP – STAINLESS - 32-50mm	6			
10	DRAIN PLUG – MAGNETIC – M14 (fitted to tank)	1	DP-M14		
11	BRASS – TAIL BARB - 5/8" x 3/8" BSP	1			
12	FUEL PICK UP - 5/16" x 1/4" BSP ELBOW	1			
13	T-PIECE – OFFSET – STEEL – 5/8" x 5/16"	1	TPO-58516		
14	FUEL GUAGE/SWITCH – CP 309GS LED DASH UNIT	1			
15	WIRE – TWIN CORE – 3.0mm – BROWN/WHITE—WITH PLUG	6.5m			
16	CRIMP FITTING – SPADE FEMALE 6mm - INSULATED - RED	1			
17	CRIMP FITTING – SPADE FEMALE 4mm - RED	1			
18	CRIMP FITTING - RING 5MM - RED	1			
19	CRIMP FITTING – JOINER 3mm - RED	1			
20	SCOTCH LOCK	1			
21	SENDER UNIT - VDO 220-004—FITTED TO TANK	1			
22	FUEL PUMP – POSI-FLO	1			
23	FUEL FILTER – INLINE – 8mm	1			
24	SET SCREW – HEX – M10 x 30mm – ON WIRE – PLATED 8.8	6			
25	BOLT – HEX – M10 x 40mm – PLATED 8.8	4			
26	NUT – STANDARD PLATED – M10	16			
27	WASHER – PANEL PLATED – M10	8			
28	WASHER – SHAKEPROOF INTERNAL PLATED – M10	8			
29	TWIN FILLER	1	TF-NPF06A1		
30	FILLER TUBE	1	FT-NPF06A1		
31	WARRANTY CARD & INFORMATION SHEET	1			
32	BROWN DAVIS AUTOMOTIVE STICKER	1			

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Packed by **(P)**: \_\_\_\_\_

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All Brown Davis Automotive fuel tank kits are manufactured to Australian Standards and the Australian Design Rules where applicable and carry a full **3 Year Warranty**. Construction in 2.0 mm (14 gauge) cold rolled, aluminium coated, steel ensures maximum strength and durability and minimum corrosion susceptibility. This gauge of steel is sufficiently impact resistant that an additional tank guard is not necessary (most standard tank guards are thinner than 1.5 mm).

All tanks are M.I.G. (Metal Inert Gas) welded to assure the strongest possible seams and are baffled to prevent fuel surge. They are then pressure tested using two different techniques to eliminate the possibility of leaks. Drain plugs are fitted horizontally to prevent them being damaged if the tank is scraped over rocks and are magnetic to collect any metallic dirt that may enter your fuel system.

In all cases, Brown Davis Automotive fuel tanks are designed with severe off road use in mind and will not compromise ground clearance, entry, exit or ramp over angles.

**AUXILIARY TANKS** Are designed to be installed in addition to the original factory fuel tank, with its own fuel gauge. An electrical changeover system simultaneously changes the source of fuel from the original (main) tank to the auxiliary tank (or vice versa), the vehicles fuel gauge is simultaneously changed over to indicate the level in the tank from which the fuel is being drawn.

### **Install**

1. The spare wheel needs to be removed to allow installation of this tank. Proceed to lower the wheel and remove the associated spare wheel brackets from the underside of the vehicle.
2. The transfer fuel pump wiring needs to be routed from the engine bay area to the rear of the vehicle to the fuel filler side of the vehicle. Leave approximately 1m of wire at the engine bay and route the dual core wire down the firewall to the driver's side chassis rail. Follow the chassis rail and cross over on the gearbox cross member and along the hand brake cable bracket, and finally over the diff to the chassis rail around the fuel filler area. The wire from the engine bay needs to now be pushed through the fire wall through the loom grommet on the fire wall in front of the driver. This will be wired later to the fuel gauge and transfer pump switch.
3. Mount the fuel transfer pump to the chassis rail as shown below, connecting the red wire from the dual core wire to the positive on the fuel pump, and connect a separate wire from the negative on the fuel pump and ground this to the chassis (as shown on the wiring diagram attached). The black wire from

the twin core wire can be stripped back from the plastic sheath around 30mm and let to hang which will be connected to the gauge sender unit on the fuel pump at a later stage. The 8mm fuel hose needs to be fitted to the pump also as shown. Ensure flow of the pump points away from the tank to the filler neck.



4. The filler neck needs to be modified to suit the new twin filler set up. Remove the standard filler neck and cut as shown. Fit the new twin filler with the standard rubber sealing gasket and place back in position. The standard filler tube to the main tank can be connected with the 38mm fuel hose supplied. **Note:** Image shows the filler tube for the auxiliary tank connected, this will be completed after tank installation.



5. The tank needs to be prepared for installation. Connect a wire to the gauge sender unit with a female crimp provided, and fit the brass fuel pick up and tail barb as shown in the image below using thread sealant. Furthermore, attach the TMP fuel hose supplied to the fuel pick up and breather. The pick up hose should route towards the transfer pump when lifting the tank into position, and the breather line following close by heading to the filler neck. Thoroughly clean out the tank with petrol and inspect for any foreign debris, this is the responsibility of the installer.



6. The tank can now be lifted into fitting position using a transmission jack or similar. The tank needs to be aligned evenly with the holes on the two side mounting brackets lying central on the underside of the chassis rail. Once in position, pilot drill each of the holes on the side brackets with a 3mm drill bit, before finishing with a 10.5 - 11mm drill bit.
7. Once the side bracket holes are drilled, use the provided M10 screws on wire, passing them through the factory slot in the chassis rail and protrude them out through the holes drilled (It is easier to do the furthest hole first). Hold these bolts in place only finger tight with a panel washer, shakeproof washer and M10 nut provided.
8. The rear brackets need to also be drilled. Again pilot drill two holes on each bracket before moving to the 10.5 - 11mm drill bit. Once drilled, fit the supplied loose M10 x 40mm bolts, fastening finger tight with panel washers and shakeproof washers supplied.

**Note:** If fitting wheel carrier, the rear brackets need to be cut down approximately 35-40mm to fit, and the mounts drill through and mount to the wheel carrier brackets (Kaymar).



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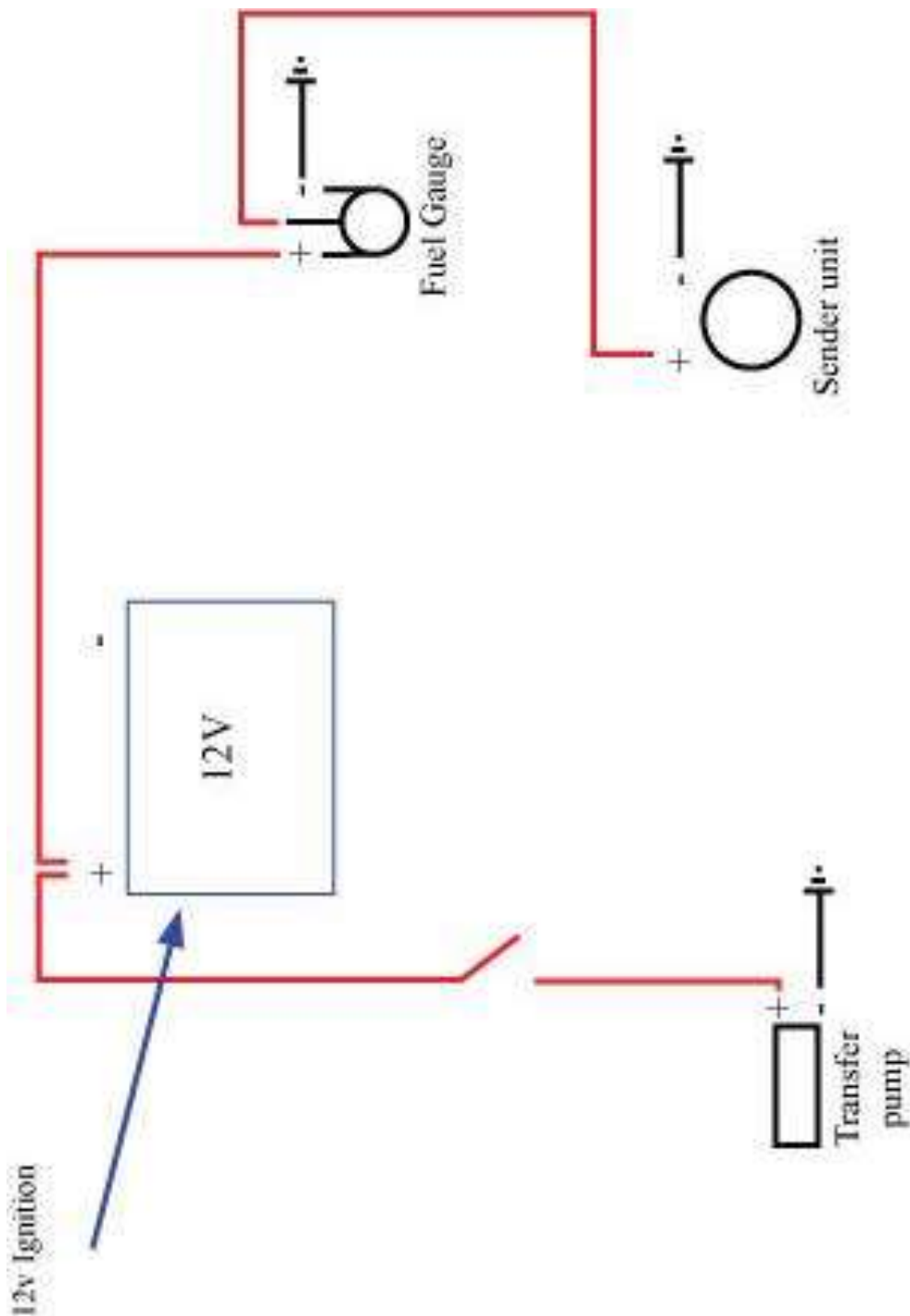
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9. With the tank in position, inspect all mounts before proceeding to tighten all bolts fully. Once tightened, each bolt should have a second nut (supplied) fitted to each bolt and tightened against the first one for additional strength.
10. The gauge sender unit wire and black wire from the dual core wire that were both prepared earlier now can be joined with a male / female spade type crimp fitting.
11. Connect the fuel pick up hose to the fuel pump entry side. On the pump exit side, connect the supplied fuel filter in line. And attach hose to reach up to the filler neck on the appropriate bundy tube on the filler neck which goes to the main tank. This therefore transfers fuel from the auxiliary tank into the main tank via the filler neck.
12. Connect the breather line TMP hose to the bundy tube at the top of the twin filler neck. Fasten hoses with supplied hose clamps.
13. The filler tube for the aux tank can now be fit in place, and fastened with the supplied hose clamps and TMP fuel hose.
14. Moving to the front of the vehicle, the wiring for the fuel gauge sender unit and transfer pump switch needs to be completed. Using the wiring diagram provided, and remembering the black wire from the dual core wire routed in through the firewall is the gauge sender unit signal wire, complete the system accordingly.
15. Once wired, turn the vehicle to accessory power to check the fuel gauge is powering up and showing empty. Proceed to turn on the fuel pump transfer switch and inspect the pump for function.
16. Inspect the entire installation for issues, and proceed to fill the auxiliary tank and then transfer the fuel and inspect for any leaks.





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### **OPERATION INFORMATION**

The operation of your new Brown Davis Automotive gas conversion fuel tank is little different from the original main tank, however very similar.

Filling the tank may be via a dual filler neck in the factory fuel fill position, or may be a remote filler at another location as identified to you upon installation. Simply fill the auxiliary petrol tank exactly as with a standard tank via the appropriate filler type.

The fuel gauge is separate to the main tank, however will read as with a standard gauge indicating empty/full and the progression in between. It should read with the same degree of accuracy as with a standard tank other than the difference in capacity to the standard tank.

The low fuel light for the main tank will still function as normal.

Maintenance and service of your new Brown Davis Automotive auxiliary fuel tank other than the recommended 1000km check and filter change should be in align with the normal vehicle Manufactures service schedule and guidelines. Remember the long range tank has a magnetic drain plug that the standard tank did not. With the fuel level low the drain plug can be removed and cleaned to remove any metal fragments introduced from the filler bowser scraping on the filler tube when filling or particles and rust flakes from jerry cans used on long trips. This facility is supplied to protect the in-tank fuel pumps fitted to most modern vehicle fuel tanks.

**Finally make sure the warranty card is filled out completely and returned to Brown Davis Automotive and that the warranty information is read and understood. If there are any queries about this or any of the above information please contact us at Brown Davis at the attached address or phone and fax numbers for assistance.**