



Brown Davis Automotive Pty. Ltd.

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NPFR2

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Last edited: 26/05/2014

Fuel Tank Part List and Installation Instructions

TANK P/N: **NPFR2**

NISSAN PATHFINDER – (1996 – mid 2005 EFI V6)
REPLACEMENT TANK

Item	Description	Quantity	Part number	P	C
1	TANK – REPLACEMENT	1	NPFR2		
2	HOSE – FUEL AND EMISSION – 6.5mm	0.5m			
3	HOSE – FILLER HOSE - 35mm	120mm			
4	HOSE CLAMP – NORMA - 12mm	2			
5	HOSE CLAMP – PLATED - 8-16mm	4			
6	HOSE CLAMP – PLATED - 12-22mm	2			
7	HOSE CLAMP – STAINLESS - 32-50mm	2			
8	DRAIN PLUG – MAGNETIC – M14 (fitted to tank)	1	DP-M14		
9	BRASS – TAIL BARB - 5/8" x 1/4" BSP	1			
10	SET SCREW – HEX – M8 x 30mm –PLATED 8.8	4			
11	WASHER – SPRING PLATED – M8	4			
12	WASHER – PANEL PLATED – M8	4			
13	WASHER – PANEL PLATED – M10	2			
14	O-RING – 4 3/4 x 5 1/8 x 3 (BS7351)	1			
15	DISCRIMINATOR VALVE	1			
16	DISCRIMINATOR VALVE SEAL	1			
17	WARRANTY CARD & INFORMATION SHEET	1			
18	BROWN DAVIS AUTOMOTIVE STICKER	1			

Packed by (P): _____

Checked by (C): _____

Date Packed: ____ / ____ / ____



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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 cold rolled, aluminium coated steel ensures maximum strength and durability and minimum corrosion susceptibility. More than 30 years of testing within the field has shown that 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 ensure 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 general off road use in mind and are designed not to compromise ground clearance, entry, exit or ramp over angles.

Please remember it is the driver's responsibility to operate their vehicle in a sensible manner in 4WD conditions, Brown Davis Automotive cannot be held responsible for the abuse of your vehicle and subsequent possible fuel tank damage.

REPLACEMENT TANKS This tank is a replacement for the standard tank and fits in the same location. The standard filler is retained as is the fuel gauge sender unit which still works in the same manner except it takes longer to reach empty. Rearrangement of the exhaust system **IS NOT** necessary with this fitment.

ANY QUESTIONS OR INFORMATION REQUIRED IN RELATION THE BELOW INSTRUCTIONS PLEASE DO NOT HESITATE TO CONTACT BROWN DAVIS HEAD OFFICE OR ONE OF OUR DISTRIBUTORS.

PLEASE ENSURE ALL CONNECTIONS AND MOUNTINGS ARE CHECKED A SECOND TIME AFTER FINISHING YOUR INSTALLATION TO CONFIRM THERE ARE NO LEAKS AND THAT ALL BOLTS ARE TIGHT. ALWAYS ROAD TEST THE VEHICLE AND MAKE SURE THERE IS COMPLETE SUSPENSION TRAVEL CLEARANCE.

BROWN DAVIS CAN TAKE NO RESPONSIBILITY FOR AFTER MARKET SUSPENSION SYSTEMS INTERFERING WITH THE TANK, IF FITTED.

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FITTING (fitting time is approximately 3 hours)

- 1 Remove the filler cap and drain the remaining fuel out of the standard tank.
- 2 From the inside of the vehicle, fold forward the passenger side rear seat base, lift the rubber floor cover and locate the fuel gauge/pump access panel. Unscrew this panel and unplug the two plugs from the fuel gauge/pump assembly.
- 3 Place vehicle on hoist (or similar) and raise to convenient working height.
- 4 Remove the tailshaft, by unbolting it at the differential flange end, then slide the tailshaft out carefully from the rear of the transfer case, making access room for the new tank installation. If the vehicle is level, the oil in the transfer case will not drain out.
- 5 Disconnect the passenger side handbrake cable at the central junction in the tailshaft tunnel, at the rear of the transfer case. Unbolt and cut off the cable the three handbrake cable support brackets, and discard them (The first is located under the middle of the standard tank, the second at the front of the passenger side lower control arm, at its mounting position, the third in the middle of the same lower control arm).
- 6 From underneath of the vehicle disconnect the old pump pickup (8mm) and return fuel (8mm) flexible fuel hoses from the steel pipes (mark these hoses and pipes to assure correct refit later), located in the tailshaft tunnel near the front of the muffler. Disconnect also the purge hose (6mm) from the small blue check valve, on its tank side (leave it connected to the steel pipe on the body as it is vitally important that this valve is retained in the system and that its direction of flow is unchanged), which is also located in the tailshaft tunnel, this time in line with the centre of the muffler. Disconnect and discard the rubber (34mm) fuel filler hose. Disconnect and retain the (13mm) fast fill breather hose from the steel filler neck assembly. This can be found attached to the chassis rail near the rear of the tank.
- 7 Support the standard tank under the vehicle, unbolting it front, middle and rear and lower tank to the ground and remove from under the vehicle (The standard tank straps can be discarded but the standard bolts must be retained for refitting).
- 8 Unscrew the 6 mounting screws from the fuel gauge/pump mounting flange in the top of the standard tank. Carefully lift up this unit (**Caution there are hoses attached inside**) until your hand fits into the tank. Reach down along the length of the hoses until you reach the fuel pump (which is attached to the swirl pot in the bottom). Unclip the pump from the swirl pot by lifting up the handle of the clip, this will release it from the swirl pot (The clip is located directly under the plug for the fuel pump wiring). Remove the fuel gauge/pump assembly from the standard tank (Clean the filter on the end of the fuel



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- pump if it is at all dirty, do this very carefully so as not to damage the filter - DO NOT USE COMPRESSED AIR).
- 9 Confirm that the Brown Davis long range tank is perfectly clean inside before assembly and installation by rinsing out the inside thoroughly, as should always be done with any new component installed into the fuel system of any vehicle. Use 4 to 5 litres of petrol, kerosene or methylated spirits for this rinsing process which should be drained and discarded afterwards. Wiping out the inside of the injection pump swirlpot with a clean rag down through the pump entry boss in the top of the tank to confirm absolute cleanliness is not a bad idea, nor is a second rinse.
 - 10 Reinstall fuel gauge pump assembly into the new long range tank, first again clipping the pump into the new swirl pot mount. Refit the gauge flange and reuse the original gasket, screws and washers (There are 2 locating pins to align flange into correct rotation).
 - 11 Fit new discriminator valve supplied and its seal, into the top of the new fuel tank (use rubber grease or similar - NOT SILICONE). Fit onto this valve the new 6mm fuel hose and hose clamp supplied, as it not possible to reach this hose once the tank is in place. Install all brass fittings into the new fuel tank using teflon tape or the like on all threads. Do not forget the drain plug. **(Refer diagram 1)**
 - 12 Under vehicle again, reconnect handbrake to central junction (removed in Step 5). The new routing of this cable is over the top of the new tank, following the floor, as the new tank will hold the cable in position (make sure you route the cable over the top of the tailshaft strap/bracket, attached to the floor behind the handbrake cable central junction).
 - 13 Lift the new tank into position, allow the 2 high pressure fuel pump hoses and the new purge hose (fitted in step 11) to droop over the side of the new fuel tank, these can be reconnected later, once the tank is in its final position. Hold up in place with a jack or similar. Align brackets on new tank to standard bracket positions on chassis and refit the original bolts.
 - 14 Tighten bolts, check clearances.
 - 15 Connect pump pickup (marked in step 6) and return hoses (also marked in step 6) to the standard fuel pipes in the tailshaft tunnel. **WARNING: Incorrect refitting of hoses to the pump/sender can damage pump unit.**
 - 16 Connect new purge hose (as fitted in step 11) to the small blue check valve (retained in step 6). Use new hose clamp supplied.
 - 17 Fit new fuel filler hose (35mm) and fast fill breather hose (13mm) to the new long range tank. New hose clamps supplied for fuel filler hose, Reuse standard hose clamps on fast fill breather hose.

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- 18 Refit tailshaft (removed in step 4). Make sure spline end going back into transfer case is clean. Use extra caution when sliding it into the transfer case, so as not to damage the oil seal. Make sure also that the bolts are tightened to the required torque setting (refer vehicle workshop manual).
 - 19 Return vehicle to ground level and remove from hoist (or similar).
 - 20 From the inside of the vehicle reconnect the wiring loom to fuel gauge/pump assembly (unplugged in step 2). The fuel gauge/pump access panel can now be refitted. The rubber floor cover can now be flipped back into place and then fold back the passenger side rear seat base.
 - 21 Confirm the drain plug has been sealed into the tank and fill with the fuel (drained in step 1). Replace the fuel filter under the bonnet after the first 1000km or 2 to 3 tank fills of the new tank and double check mounting bolts.

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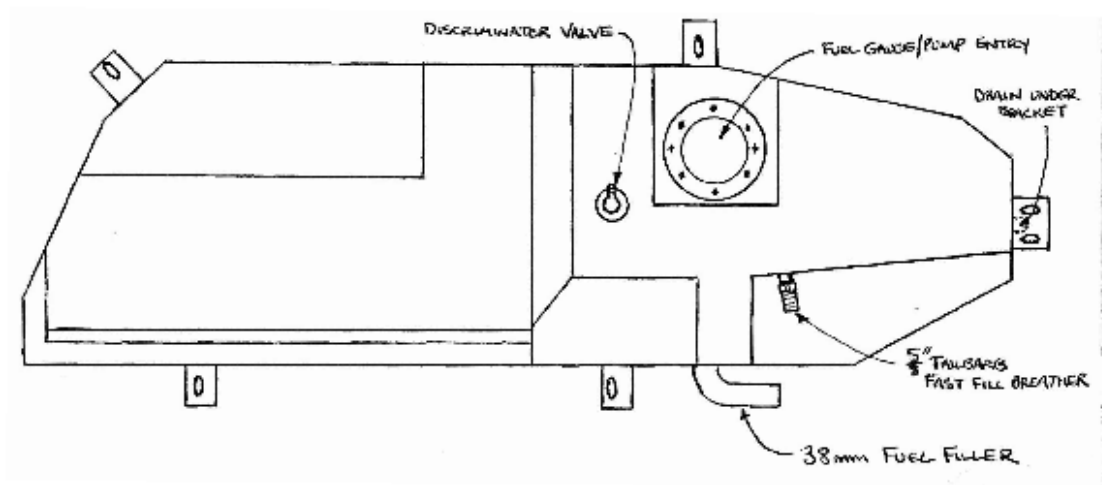
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OPERATION INFORMATION

The operation of your new Brown Davis Automotive long range fuel tank is little different from the original tank.

Simply fill the long range/auxiliary tank exactly as with a standard tank. (It just takes more fuel to fill, and a dual filler will be used for filling auxiliary tanks).

The fuel gauge on the vehicles dash will read as with the standard tank. It should read with the same degree of accuracy as it did with the standard tank other than staying on full for most of the new increase in capacity. For about 20% more than the standard tank held the gauge will now read in proportion from full down to empty. Auxiliary tanks come with a separate tank gauge to show separate fuel level to main tank.

The low fuel light will still function as normal with it coming "on" at about 20% more fuel volume left to go than it used to, to warn you of low fuel.

Remember your new long range tank(s) are carrying a lot more fuel than standard. Remain aware of how much fuel has been used during the initial period of the gauge remaining on full for future reference in estimating fuel usage and consumption.

Maintenance and service of your new Brown Davis Automotive long range 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.

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