Brown Davis Automotive Pty. Ltd.
ABN: 72 657 573 544

Last edited: 19/08/2015

Fuel Tank Kit List and Installation Instructions

*TANK P/N: **NPGQA2-D***

NISSAN GQ PATROL - (DIESEL)
78ltr AUXILIARY PETROL TANK

Item	Description	Quantity	Part number	P	C
1	TANK – AUXILIARY	1	NPGQA2-D		
2	HOSE - TMP – 6mm	1.4m			
3	HOSE – TMP – 12.5mm	1.4m			
4	HOSE – FUEL AND EMISSION - 8mm	2.0m			
5	HOSE – FUEL AND EMISSION - 10mm	2.0m			
6	HOSE – FILLER - 44mm	0.1m (x3)			
7	HOSE CLAMP – STAINLESS - 8-16mm	18			
8	HOSE CLAMP – STAINLESS - 12-20mm	2			
9	HOSE CLAMP – STAINLESS – 40-60mm	6			
10	FUEL PICK UP - 3/8" x ¼" BSP ELBOW	1			
11	BRASS – ELBOW – ½" x ¼" BSP	1			
12	BRASS – ELBOW – ¼" x ¼" BSP	1			
13	BRASS – TAIL BARB - 5/16" x ¼" BSP	1			
14	DRAIN PLUG – MAGNETIC – M14 (fitted to tank)	1	DP-M14		
15	WIRE – SINGLE CORE – 3.0mm – BLUE	2.0m			
16	WIRE – TWIN CORE – 3.0mm – RED/BLACK	4.0m			
17	CRIMP FITTING – SPADE FEMALE ¼ - RED	1			
18	CRIMP FITTING – RING 5mm - RED	10			
19	CRIMP FITTING – JOINER ¼ - RED	7			
20	SCOTCH LOCK	1			
21	SWITCH – TOGGLE DPDT	1			
22	LABEL PLATE - AUX/MAIN	1			
23	SET SCREW – HEX – M10 x 30mm – PLATED 8.8	1			
24	BOLT – HEX – M10 x 70mm – PLATED 8.8	1			
25	BOLT – HEX – M10 x 75mm – PLATED 8.8	2			
26	NUT – STANDARD PLATED – M10	5			
27	WASHER – FLAT PLATED – M10	4			
28	SET SCREW – HEX – PLATED - 5/16" x ¾" UNC	2			
29	WASHER – SHAKEPROOF INTERNAL PLAYED - 5/16"	2			
30	SET SCREW – HEX – M6 x 25mm – PLATED 8.8	1			

PH: +61 (3) 9762 8722 FAX: +61 (3) 9762 9829
47 Holloway Drive, Bayswater, Victoria, Australia 3153

info@browndavis.com.au **www.browndavis.com.au**

31	NUT – STANDARD PLATED – M6	1			
32	WASHER – SPRING PLATED – M6	1			
33	SELF TAPER SCREW – BUTTON HEAD -13mm - STAINLESS	8			
34	SENDER UNIT - MB031525 (fitted to tank)	1			
35	FUEL FILTER – INLINE – 8mm	1			
36	FILLER CAP - DIESEL	1			
37	CHANGEOVER VALVE – 6-PORT (42-159c)	1			
38	LOOM – CHANGEOVER VALVE – 6-PORT (42-203)	1			
39	TANK BRACKET – CHANGEOVER VALVE BRACKET	1	TB-CV		
40	TWIN FILLER	1	TF-NPGQA1		
41	FILLER TUBE	2	FT-NPGQG1-a		
42	FILLER TUBE	1	FT-NPGQG1-b		
43	WARRANTY CARD & INFORMATION SHEET	1			
44	BROWN DAVIS AUTOMOTIVE STICKER	1			

Packed by (**P**): _____ Checked by (**C**): _____

Date Packed: _____ / _____ / _____

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.

FITTING

1 Check to confirm that the Brown Davis tank is perfectly clean inside before assembly and installation, by rinsing out with petrol, as should always be done with any new component installed into the fuel system of any vehicle. Check the new fuel gauge sender unit supplied for length **(Refer to Diagram 2)**, then install it into the auxiliary tank using M4 screws supplied (This may already have been done).

2 Install brass fittings into the tank using TEFLON tape to seal the threads. **(Refer to Diagram 1)**

3 Bolt the **FUEL CONTROL VALVE** to its bracket supplied (using the 2x 5/16" UNC screws supplied), then screw the assembly on the driver's side chassis rail just forward of the round chassis crossmember adjacent to the transfer case. The four fitting side of the valve should be pointed toward the rear of the vehicle **(Refer Diagram 4)**. Cut the fuel pick up line, fuel return line and breather / purge line on the driver's side chassis rail just forward of the round chassis crossmember.

4 Run two (2) Twin wires from the fuel valve, up along the chassis rail tied to the brake and fuel lines, and up through the firewall to the **DPDT** toggle switch which can be

conveniently located on the dash. Join the switch active to an Ignition switched power using the **SCOTCH LOCK** joiner supplied. With the switch in the **UP** position the vehicle runs on the auxiliary tank and with it **DOWN** the vehicle runs on the standard tank. Wire up the **FUEL CONTROL VALVE** and fuel gauges **(Refer to Diagram 3)**. Connect the switch wire to terminals "D" & "E" appropriately. Run another Twin wire from "A" & "B" terminals on the control valve to the Passengers side of the Standard tank, where you should be able to locate standard fuel gauge wire (Yellow), cut this wire and join (using red joiner terminals supplied) the twin wire to these. Run a wire from terminal "C" to Auxiliary fuel gauge sender and connect using red spade terminal supplied. Test wiring circuit, and if auxiliary gauge does not rise up to the Empty line, you may have fitted "A" & "B" backwards and will need to swap them.

5 Remove excess thread from the rear seatbelt bolt, about halfway along the driver's side of the tailshaft, protruding down from the floor. This bolt needs to be shortened to clear the expansion chamber when the new tank is fitted.

6 Position the new tank (using a jack) under the floor of the vehicle, keeping as close to and parallel to the driver's side chassis rail. (The tank should touch the driver's side rear lower axel control arm pivot bolt head). Confirm the tank spacing to the floor of the vehicle is at least 8mm to allow for body movement on the chassis, if not, pack the tank down at the rear accordingly. Drill holes through the chassis at the bracket locations around the tank and bolt up using the bolts, springwashers and nuts supplied. Double nuts should be used on the driver's side rear mounting and two bolts are used through the front bracket and round crossmember at each end of the bracket (bolts put up through with nuts between the crossmember and the upper tank section).

7 Remove the Drivers side rear wheel arch guard and disconnect both the filler (1 3/4") and the fast fill breather (1/2") hose. Unbolt the standard filler neck and discard it. Remove and discard also the rubber shroud around the filler position. The new Twin Filler assembly can now be installed and riveted into place. Refit the standard filler cap to the neck closest to the rear of the vehicle. Fit the new filler cap to the neck closest to the front of the vehicle.

8 Drop rear suspension to allow working room. Fit the 45mm steel filler tubes from the filler neck to the spout on the tank. Use the two joining hose pieces and clamps on the tank spout end and to join the two halves of the filler together. The straighter steel tube of the two is used at the top around the shocker between it and the spring platform on the chassis, over the chassis rail and joins to the new auxiliary filler neck using the rubber filler joining hose supplied. The filler tube should be supported in position using the support strip wrapped around the top tube and bolted to the spring tower on the chassis with the 1/4" unc bolt, nut and springwasher supplied. Run the 12mm fast fill breather hose along the new filler and up to the 1/2" fitting on the new auxiliary (front most) filler neck. Cable tie this hose to the filler tubes using the ties supplied, making sure it does not droop lower than the filler tubes at any point.

9 The wheel arch guard can now be refitted (This will need to be trimmed).

10 Filling each tank separately can be achieved by placing the Bowser into either the standard tank (which is the cap closest to the rear of the vehicle), or into the auxiliary tank (which is the cap closest to the front of the vehicle).

11 Fill the new auxiliary tank and check all fittings for leaks. This vehicle being diesel will need to be bled to remove any airlocks from both fuel tanks, this is achieved by turning the ignition **ON** and switching the control switch to the tank that you wish to bleed, and then bleed as suggested in the vehicle hand book. Replace fuel filter after 1000km or 2 to 3 tank fills of the new tank and double check mounting bolts.

PH: +61 (3) 9762 8722 FAX: +61 (3) 9762 9829
47 Holloway Drive, Bayswater, Victoria, Australia 3153

info@browndavis.com.au **www.browndavis.com.au**

BROWN DAVIS Automotive
47 HOLLOWAY DRIVE, BAYSWATER 3153
Phone (03) 762 8722 **Fax (03) 762 9629**

DIAGRAM 1.

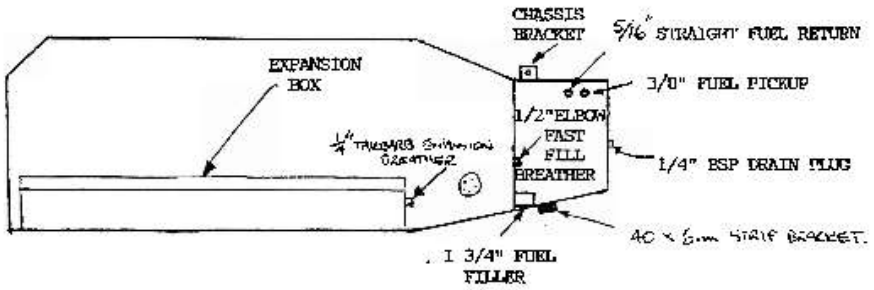
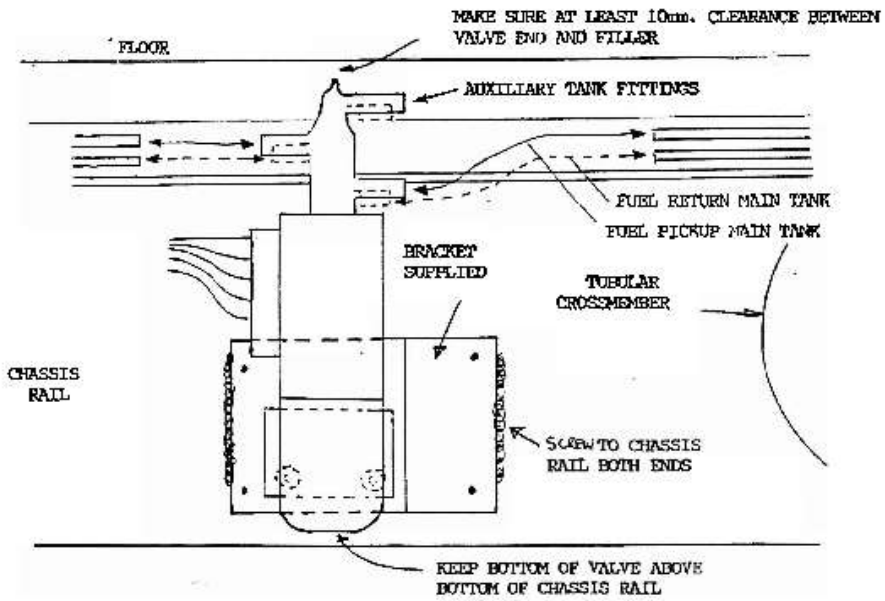


DIAGRAM 4.



BROWN DAVIS Automotive
47 HOLLOWAY DRIVE, BAYSWATER 3153
Phone (03) 762 8722 Fax (03) 762 9829

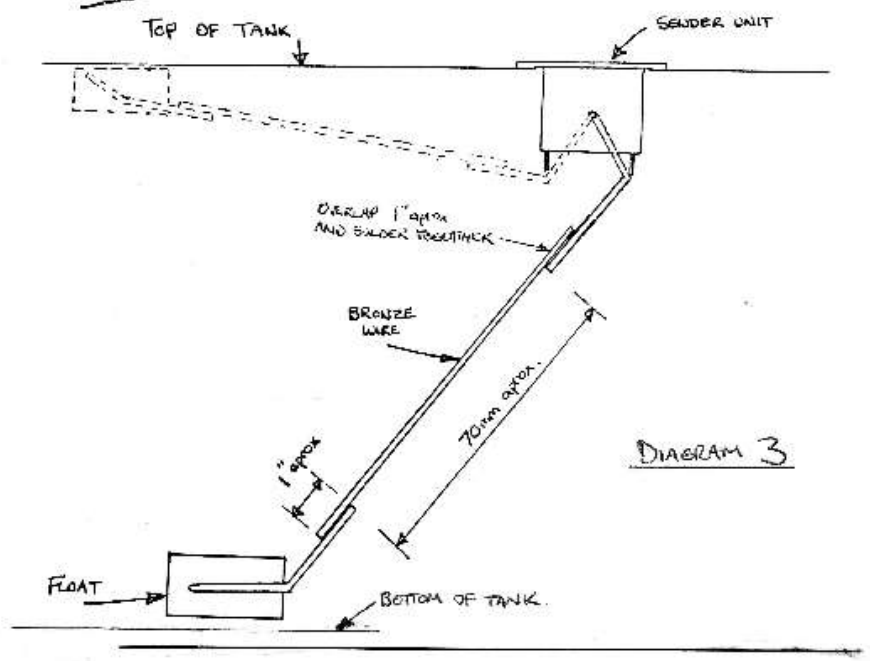


DIAGRAM 3

POLLAK 42-159 SELECTOR VALVE INSTALLATION SHEET

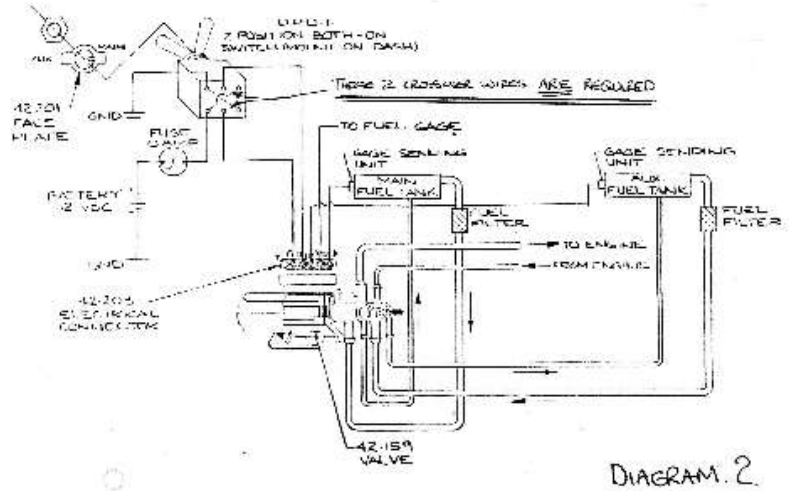


DIAGRAM. 2

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.