



Brown Davis Automotive Pty. Ltd.

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Last edited: 17/04/2012
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Fuel Tank Part List and Installation Instructions

TANK P/N: LDEA1

LAND ROVER DEFENDER 110
80ltr AUXILIARY PETROL TANK

Item	Description	Quantity	Part number	P	C
1	TANK – AUXILIARY	1	LDEA1		
2	HOSE – TMP - 6mm	3.0m			
3	HOSE – TMP - 16mm	0.5m			
4	HOSE – TMP – 12.5mm	0.45m			
5	HOSE – FUEL AND EMISSION - 8mm	1.5m			
6	HOSE – FUEL AND EMISSION - 10mm	1.0m			
7	HOSE – FILLER HOSE - 48mm	0.1m (x2)			
8	HOSE CLAMP – STAINLESS - 8-16mm	18			
9	HOSE CLAMP – STAINLESS - 12-20mm	6			
10	HOSE CLAMP – STAINLESS - 40-60mm	4			
11	DRAIN PLUG – MAGNETIC – M14 (fitted to tank)	1	DP-M14		
12	FUEL PICK UP – 3/8 x 1/4 BSP ELBOW	1			
13	BRASS ELBOW – 1/4 x 1/4 BSP	1			
14	BRASS ELBOW - 5/16" x 1/4" BSP	1			
15	BRASS ELBOW - 3/8" x 1/4" BSP	1			
16	BRASS ELBOW – 1/2 x 1/4 BSP	2			
17	T-PIECE – STAINLESS STEEL BARBED – 5/8" x 1/4"	1			
18	CRIMP FITTING – SPADE FEMALE 1/4 - RED	7			
19	CRIMP FITTING – RING 5mm - RED	5			
20	CRIMP FITTING – JOINER 5mm - RED	7			
21	WIRE – TWIN CORE – 3.0mm – RED/BLACK	4.5m			
22	SCOTCH LOCK	1			
23	SWITCH – TOGGLE DPDT - AUX/MAIN	1			
24	SET SCREW – HEX – M10 x 30mm – PLATED 8.8	4			
25	NUT – STANDARD PLATED – M10	8			
26	WASHER – FLAT PLATED – M10	4			
27	WASHER – SHAKEPROOF INTERNAL PLATED – M10	4			
28	SET SCREW – HEX – PLATED – 5/16 x 3/4 UNC	2			
29	WASHER – SHAKEPROOF INTERNAL PLATED - 5/16"	2			
32	SELF TAPER SCREW – BUTTON HEAD 13mm - STAINLESS	4			



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33	SENDER UNIT – VDO 220-005 (fitted to tank)	1			
34	FUEL FILTER – INLINE – 10mm	1			
35	FUEL FILLER & CAP – LOCKING (PERKO)	1			
36	CHANGEOVER VALVE – 6-PORT (42-159c)	1			
37	LOOM – CHANGEOVER VALVE – 6-PORT (42-203)	1			
38	TANK BRACKET - CHANGEOVER VALVE BRACKET	1	TB-CV		
39	FILLER TUBE	1	FT-LDEA1		
40	WARRANTY CARD & INFORMATION SHEET	1			
41	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 (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.

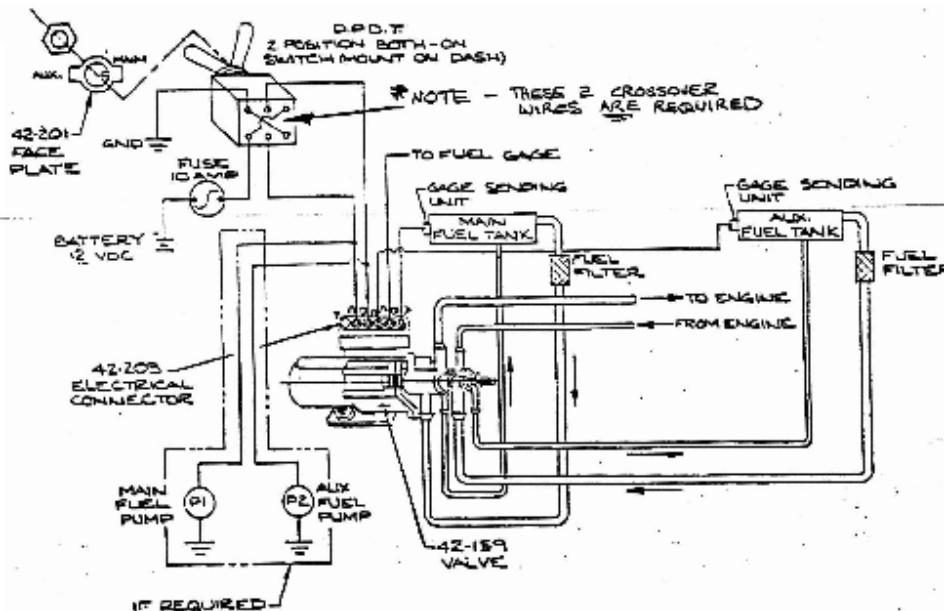




47 HOLLOWAY DRIVE, BAYSWATER 3153

Phone (03) 762 8722 Fax (03) 762 9829

42-159 SELECTOR VALVE INSTALLATION SHEET



I. GENERAL INFORMATION

- THE 42-159 SELECTOR VALVE IS INTENDED FOR USE WITH THE FOLLOWING:
- VEHICLES WITH ONE MAIN AND ONE AUXILIARY FUEL TANK.
 - VEHICLES WITH FUEL RETURN LINES.
 - 12 VDC ELECTRICAL SYSTEMS.
 - VEHICLES WITH IN-TANK FUEL PUMPS OR VEHICLES WITH A SINGLE FUEL PUMP BETWEEN THE VALVE AND ENGINE.
 - AMBIENT TEMPERATURES BETWEEN -40°F AND $+180^{\circ}\text{F}$.
 - GASOLINE AND DIESEL FUEL SYSTEMS ONLY.
 - NOT FOR USE IN FUEL SYSTEMS OPERATING OVER 65 PSI.

II. INSTALLATION INSTRUCTIONS

THE ELECTRICAL AND FUEL SYSTEMS SHOULD BE CONNECTED TO THE VALVE AS SHOWN ABOVE. CHOOSE A PROTECTED LOCATION NEAR THE ORIGINAL FUEL LINES AND USING PROPER LENGTH $3/16$ -ID BOLTS, SECURELY MOUNT THE SELECTOR VALVE TO THE CHASSIS OR OTHER SOLID MOUNTING SURFACE. ORIENT IT SUCH THAT THE SIDE OF THE VALVE WITH THE FOUR PORTS POINTS TOWARDS THE FUEL TANKS. ROUTE THE AUXILIARY TANK'S SOURCE AND RETURN LINES TO THE VALVE. DRAIN THE FUEL IN THE MAIN TANK AND CUT THE ORIGINAL FUEL LINES. BE PREPARED TO CATCH AND SAFELY STORE ANY FUEL SPILLING FROM THE CUT LINE. USING PROPERLY TIGHTENED "WORM" STYLE HOSE CLAMP AND GASOLINE-APPROVED FLEXIBLE FUEL HOSE, CONNECT THE FUEL LINES TO THE PROPER PORTS ON THE SELECTOR VALVE. INSTALL FUEL FILTERS IN THE SOURCE LINES AS SHOWN. THE FUEL LINE ROUTING SHOULD MINIMIZE THE NUMBER OF BENDS AND HAVE THE LARGEST POSSIBLE RADIUS TO MINIMIZE THE FLOW RESTRICTIONS.

CHOOSE A POSITION ON THE DASH AND MOUNT THE 200T TOGGLE SWITCH AND 42-201 FACE PLATE. CUT THE ORIGINAL WIRE FROM THE FUEL TANK SENDING UNIT TO THE FUEL GAUGE AND CORRECT BOTH ENDS TO THE 42-203 CONNECTOR AS SHOWN. CONNECT THE NEW TANK'S SENDING UNIT TO THE CONNECTOR. "CROSS-WIRE" THE TOGGLE SWITCH AS SHOWN CONNECTING ONE PAIR OF TERMINALS TO A GOOD GROUND AND THE OTHER PAIR OF TERMINALS TO $+12$ VOLTS THROUGH A 10 AMP FUSE. CONNECT THE MIDDLE TERMINALS ON THE SWITCH TO THE CONNECTOR AS SHOWN MAINTAINING THE ORIENTATION BETWEEN THE SWITCH'S KEY AND THE ELECTRICAL CONNECTIONS. ALL ELECTRICAL CONNECTIONS MUST BE SECURE AND THE HOSES TO THE 42-203 CONNECTOR SHOULD BE SECURE, ELECTRICALLY INSULATED AND SEALED TO PREVENT CORROSION OF THE BOLTS.

DOUBLE CHECK THE SYSTEM TO BE SURE ALL THE ELECTRICAL AND FUEL CONNECTIONS HAVE BEEN INSTALLED CORRECTLY. THEN PLACE A SMALL QUANTITY OF FUEL BACK INTO THE FUEL TANKS TO CHECK THE SYSTEM FOR LEAKS AFTER IT HAS BEEN DETERMINED THERE ARE NO FUEL LEAKS. START THE VEHICLE ENGINE AND SWITCH TANKS TO DETERMINE IF VALVE IS FUNCTIONING PROPERLY. CHECK THE GAS GAUGE WHEN TRANSFERRING BETWEEN TANKS FOR PROPER FUEL LEVEL INDICATION. AFTER IT HAS BEEN DETERMINED EVERYTHING HAS BEEN INSTALLED PROPERLY REFILL THE FUEL TANKS.

III. VALVE OPERATION

WITH $+12$ VDC TO TERMINAL B AND GROUND TO D THE FUEL WILL FLOW FROM THE MAIN FUEL TANK THRU THE FILTER, THRU THE VALVE, TO THE ENGINE AND RETURN BACK THRU THE VALVE TO THE MAIN FUEL TANK. REVERSING THE POLARITY TO TERMINALS E AND C WILL CAUSE THE FUEL TO FLOW FROM THE AUXILIARY FUEL TANK THRU THE FILTER, THRU THE VALVE TO THE ENGINE AND RETURN BACK THRU THE VALVE TO THE



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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.

