

**INEOS GRENADIER - AUXILIARY TANK
AUXILIARY FUEL TANK PARTS LIST AND FITTING INSTRUCTIONS
PART NUMBER:IG23A1**

Item #	Description	Quantity	Part No.	P	C
1	DRAIN PLUG - MAGNETIC - M14 (FITTED TO TANK)	1			
2	TANK - AUXILIARY	1	IG23A1	-	-
3	FILLER - TUBE	1	IG23A1 - FT		
4	FILLER - NECK	1	IG23A1 - FN		
5	BRACKET - TANK MOUNT	2	IG23A1-205		
6	BRACKET - PUMP MOUNT	1	IG23A1 - PMB		
7	BRACKET - FILLER MOUNT	1	IG23A1 - FMB		
8	T-PIECE - STEEL WITH BARB	1	IG23A1 - T		
9	EXHAUST TAIL PIPE	1	IG23A1 - ETP		
10	HOSE - FUEL EMISSION - 6mm	250mm			
11	HOSE - FUEL EMISSION - 8mm	710mm			
12	HOSE - FUEL EMISSION - 8mm	110mm			
13	HOSE - FUEL EMISSION - 8mm	1500mm			
14	HOSE - FUEL EMISSION - 12.5mm	700mm			
15	HOSE - FUEL EMISSION - 12.5mm	700mm			
16	HOSE - FUEL EMISSION - 38mm	100mm			
17	HOSE - FUEL EMISSION - 38mm	120mm			
18	HOSE - FUEL EMISSION - 44mm	60mm			
19	HOSE CLAMP - STAINLESS - 40-60mm	2			
20	HOSE CLAMP - STAINLESS - 32-50mm	5			
21	HOSE CLAMP - STAINLESS - 12-22mm	5			
22	HOSE CLAMP - STAINLESS - 8-16mm	8			
23	CUSHION CLAMP - 35mm	1			
24	CUSHION CLAMP - 45mm	1			
25	NORMA CLAMP - 13mm	2			
26	T PIECE - NYLON - 12mm	1			
27	FUEL PICK UP - 5/16" x 1/4" BSP ELBOW <i>cut to 245mm</i>	1			
28	BRASS FITTING - BARB 1/2" x 1/4" BSP	1			
29	BRASS FITTING - ELBOW 5/16" x 1/8" BSP (FUEL PUMP)	1			
30	CABLE TIE - 8" BLACK	10			
31	WIRE - TWIN CORE - 3.0mm - BROWN/WHITE - WITH PLUG	4.5m			
32	SENDER UNIT - VDO 220-004	1			
33	FUEL PUMP - POSI-FLO	1			
34	FUEL FILTER - INLINE - SMALL - VENT HOSE	1	F19		
35	FUEL FILTER - STRAIGHT - 8mm	1			
36	FUEL GUAGE/SWITCH - CP 309GS LED DASH UNIT - KIT	1	CP309GS-KIT		
37	SET SCREW - HEX - M6 x 16mm	5			

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Item #	Description	Quantity	Part No.	P	C
38	WASHER - FLAT - M6	9			
39	NYLOC NUT - M6	4			
40	SET SCREW - HEX - M8 x 25mm	2			
41	WASHER - SPRING - M8	2			
42	WASHER - FLAT - M8	2			
43	WASHER - PANEL - M8	2			
44	SET SCREW - HEX - M10 x 30mm	6			
45	WASHER - SPRING - M10	8			
46	WASHER - FLAT - M10	8			
47	WASHER - SHAKEPROOF - M10	6			
48	WASHER - PANEL - M10	2			
49	NUT - M10	4			
50	NUT - NYLOC - M10	4			
51	C17 - EXHAUST CLAMP	1	C17 EXHAUST CLAMP		
52	FUEL CAP	1			
53	WARRANTY CARD & INFORMATION	1			
54	BROWN DAVIS AUTOMOTIVE STICKER	1			

	STAFF INIT	DATE
KIT PACKED BY		
KIT CHECKED BY		

TORX BIT REQUIRED TO REMOVE REAR COVER

IMPORTANT

FOR THE INSTALLATION OF THIS PRODUCT IT IS RECOMMENDED TO USE EXHAUST CEMENT AS OUTLINED IN THE INSTRUCTIONS. THIS WILL PREVENT UNWANTED EXHAUST MOVEMENT.



THIS PRODUCTS CAN BE FOUND AT AUTO PARTS STORES SUCH AS REPCO, SUPERCHEAP AND AUTOBARN.

PART NUMBER: IG23A1
AUXILIARY FUEL TANK PARTS LIST AND FITTING INSTRUCTIONS



IG23A1 - AUX TANK



IG23A1 - TANK
MOUNT
X2 REQUIRED



IG23A1 - PUMP
MOUNT BRACKET



IG23A1 - FILLER
MOUNT BRACKET



IG23A1-ETP



IG23A1-FT



IG23A1-T



IG23A1-FN

READ BEFORE COMMENCING FITMENT OF FUEL TANK



- Check contents of the kit before commencing fitment.
- Brown Davis recommends having the fuel system disconnected for as minimal time as possible as some newer vehicles have fuel senses which if left with no fuel for a period of time will prevent the vehicle to start.
- See vehicles owners manual on details on how to bleed the fuel system once fuel TANK is installed.
- An internal inspection is recommended for new tanks before installation, with a thorough wiping out with methylated spirits if required.

Any questions or information required in relation to the following instructions please do not hesitate to contact Brown Davis head office or one of our distributors.

Phone: +61 (3) 9762 8722

Email: info@browndavis.com.au

Remove cover plate at the rear of the vehicle. This cover is mounted with torx bolts.

Make sure to retain all nuts and bolts as these will be used during the installation of the Brown Davis tank.

NOTE: THIS INSTALLATION WILL REQUIRE REAR MUFFLER DELETE.



Both left and right bracket need to be removed. Keep the bracket and hardware as they will be needed for installation of Brown Davis tank.



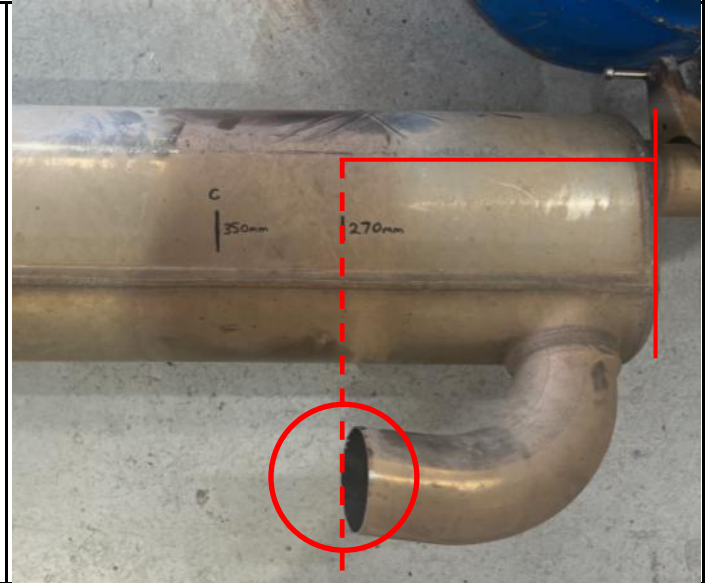
This is the portion of exhaust that will be deleted for installation.

REFER TO NEXT PAGE FOR A CLOSER VIEW OF MEASUREMENTS FOR CUT.



Using these dimensions cut the muffler while in the car. Once the muffler has been cut remove the muffler from the vehicle and set it aside.

270mm measured from the edge shown in red.



Remove the rear section of heat shield under the car.



Now that the heat shield rear section is out of the car it will need to be cut in order to fit Brown Davis auxiliary tank.

SEE NEXT PAGE FOR IMAGE OF CUT.



Cut the shield using tin snips or an angle grinder and try to follow the cut line indicated in the image.

NOTE: Discard the piece with red X on it.



One final cut has to be made in the heat shield to allow for clearance on the VDO.

SEE STEP FOR PHOTO OF CUT FROM FURTHER AWAY.



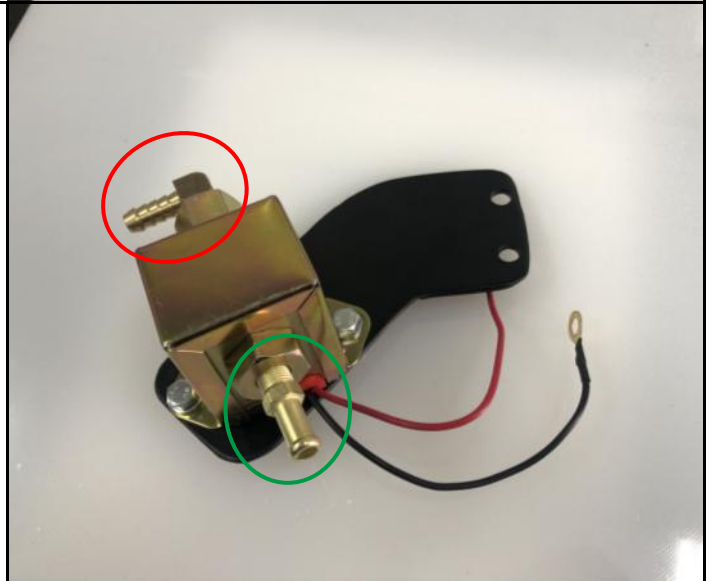
The heat shield can now be reinstalled into the car. Check that all cutting of the heat shield match the reference image.



Mount the fuel pump to the fuel pump bracket as shown in the image.

Use M6x16mm set screw, M6 flat washer and M6 nyloc nuts to secure pump to bracket.

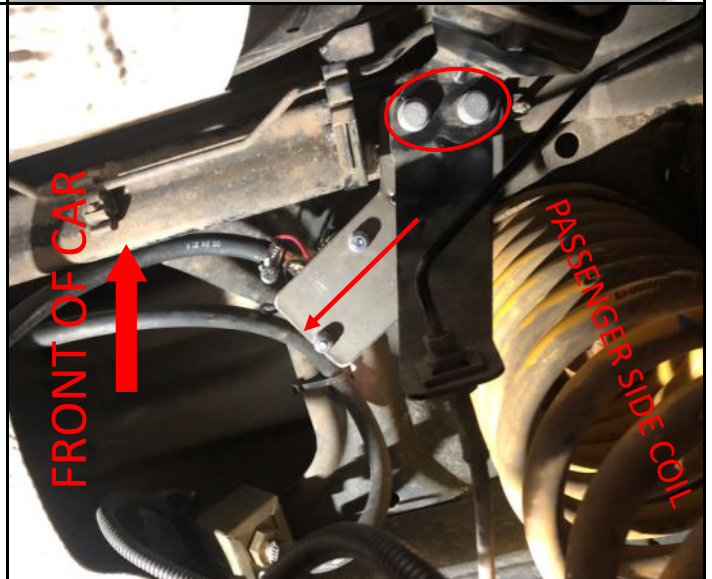
Install brass **5/16" x 1/8" BSP brass elbow** and **5/16" x 1/8" BSP barb** onto the pump as shown. Follow orientation seen in the image. Use thread sealant or Teflon paste, it must be fuel resistant.



Mount pump and bracket in rear passenger side of car next to coil spring.

Unbolt captive bolts from where brake line and canister bracket is mounted to the cross member.

Slide fuel pump mounting bracket above canister bracket and do up the bolts securing pump and bracket in place.



Remove factory bolts from the rear cover bracket. These will be replaced with supplied M10x30mm and M10 hardware to bolt the supplied tank brackets (IG23A1 - 205) to the vehicle.

This has to be done on both driver and passenger sides of the vehicle.



Mount the supplied tank brackets as seen in the image.

This has to be done on both driver and passenger sides of the vehicle.



Remove the flare on the side of the vehicle that has the filler on it. Retain all bolts for reinstall.



Remove the factory splash guard and retain all bolts for reinstall.

Remove factory filler tube from the car. This will not be required in the installation as there is a supplied filler tube.





IG23A1 LAYOUT MAP: REFER TO THIS IMAGE DURING INSTALL.

Once the factory filler neck has been removed, the T-piece can be installed. The barb must be facing downward towards the floor. This will be secured with a 32-50mm hose clamp.

The T-piece must be to be as far left as possible going towards the passenger side of the car. This will give the filler tube more clearance on the diff and driver side coil.

NOTE: leaving the hose clamp loose for readjustment will help when other components of the filling assembly have been installed.

PASSENGER SIDE OF CAR



DRIVER SIDE OF CAR

Get the filler neck ready for installation. Install the 250mm x 6mm hose onto the small barb and connect the small inline fuel filter to the end using Norma clamps.

Install the 12.5mm x 700mm hose onto the larger barb on the filler neck, use 12-22mm clamp. This hose is the fast fill breather and will need to be connected to the small nylon t-piece.

NOTE: HOSES MAY NEED TO BE TRIMMED ONCE INSTALLED TO ENSURE NO KINKING.



Run the filler neck up through the underside of the car into the filler hatch. Connect the other end of the filler neck to the steel t-piece using 44mm x 60mm hose and 40-60mm hose clamps.

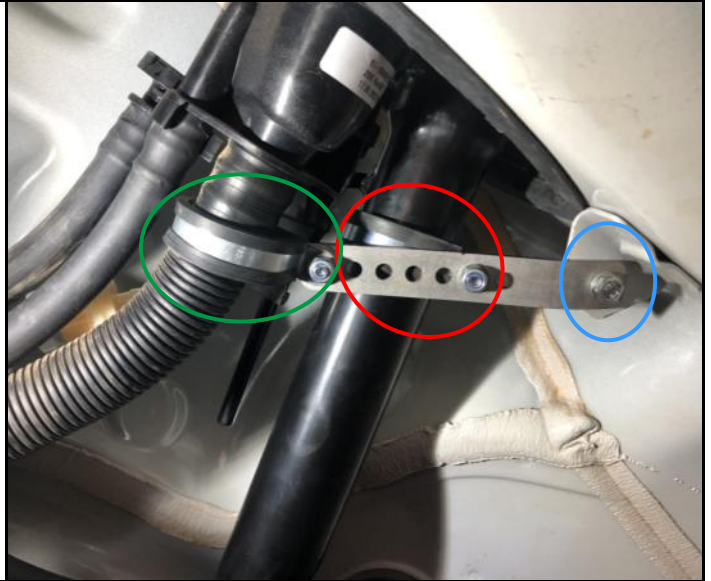


Mount filler neck and AD blue filler necks to body by using the filler mount bracket.

Filler mount bracket: Mount to body using supplied M6x16 set screw and washer.

FILLER: Mount to filler mount bracket using 44mm cushion clamp and M6x16 set screw, M6 washer and M6 nyloc nut.

AD-BLUE: Mount to filler mount bracket using 35mm cushion clamp and M6x16 set screw, M6 washer and M6 nyloc nut.



Loop the hose with the fuel filter for the vent hose and attach to Ad blue line using cable tie.

Filter shown in red.



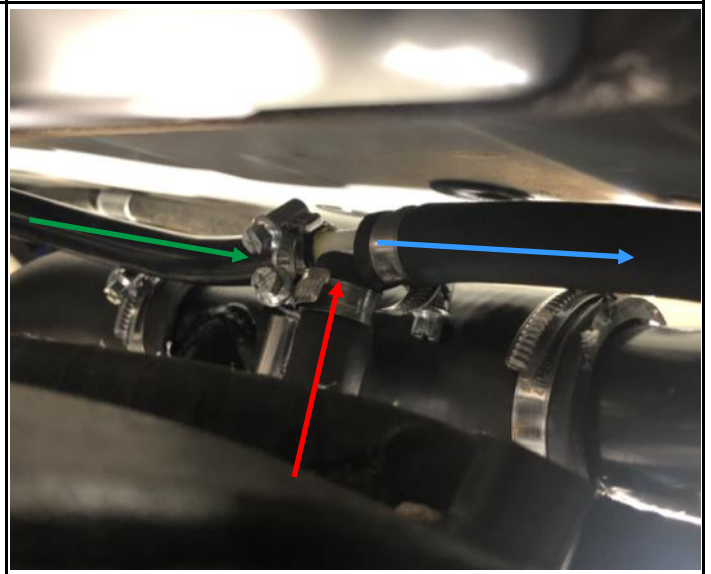
Above the steel T-piece will sit the nylon T-piece for the fast fill breather.

700mm x 12.5mm hose will run from the brass barb fitting on the tank to the nylon t-piece seen in the image.

700mm x 12.5mm hose runs from T-piece to fast fill fitting on supplied filler neck.

Factory fast fill hose needs to be cut as shown in image and plumbed into the t-piece.

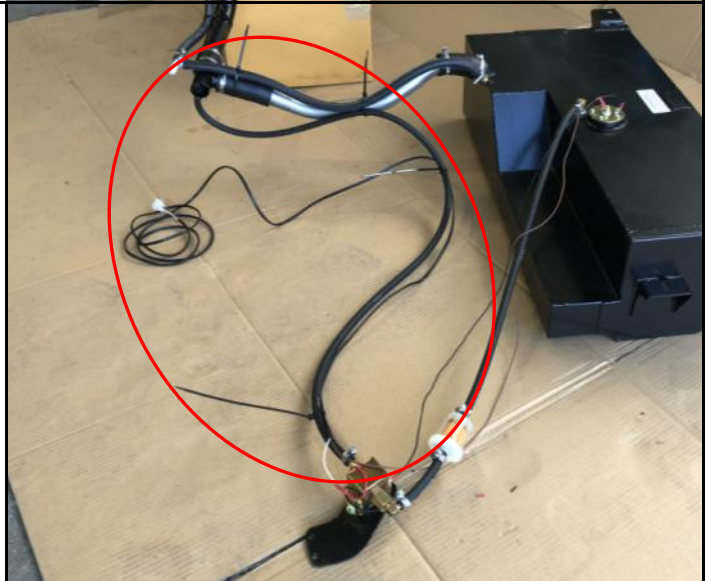
Secure all connections with hose clamps and cable tie where necessary to keep neat.



Now that the pump and the steel t-piece are mounted in the vehicle install the 8mm x 1500mm connecting the fuel pump to the t-piece barb.

Connect the hose to the straight barb fitting on the pump and run the hose along the cross member to the filler tube. Then run the hose along the filler tube and plumb into the barb on the t-piece, use 8-16mm hose clamps on both ends. Cable tie where necessary.

NOTE: HOSES MAY NEED TO BE TRIMMED ONCE INSTALLED TO ENSURE NO KINKING.



Now that plumbing is complete the 12 volt side of the installation can be carried out.

When installing the auxiliary tank switch/gauge customer input may be required. Choose a suitable location for the gauge that will suit.

This installation next to the steering wheel has been selected. Remove the trim and drill a hole to fit the switch.

REFER TO WIRING DIAGRAM ON PAGE 4



Install switch and feed the wiring back through the panel.

Connect small black plug to loom and earth black wire to a good earth point.

REFER TO WIRING DIAGRAM ON PAGE 4



12 volt ignition power source can be picked up from the fuse box inside the cabin of the vehicle as shown.

REFER TO WIRING DIAGRAM ON PAGE 4



Under the carpet is a grommet that can be used to run the wiring under the car to the pump.

Connect large black plug to the wiring from the dash to the twin core brown/white wiring loom that will need to run underneath the car to the pump and VDO. Cable tie the wiring to existing lines running down the car for neatness.

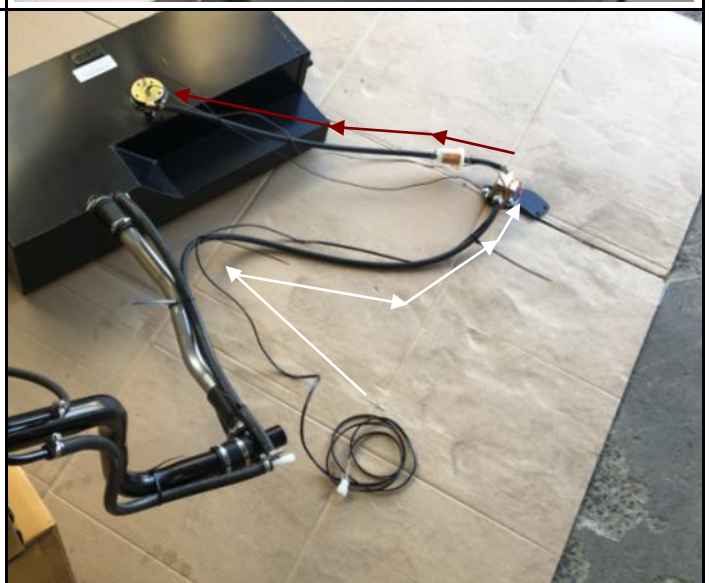
REFER TO WIRING DIAGRAM ON PAGE 4



Run the brown/white wiring loom routing it with the 8mm hose that goes to the fuel pump. Connect the white wire to the red wire on the fuel pump using spade connectors.

The brown wire will need to be connected to the VDO once the tank has been installed so leave it accessible for the time being.

REFER TO WIRING DIAGRAM ON PAGE 4

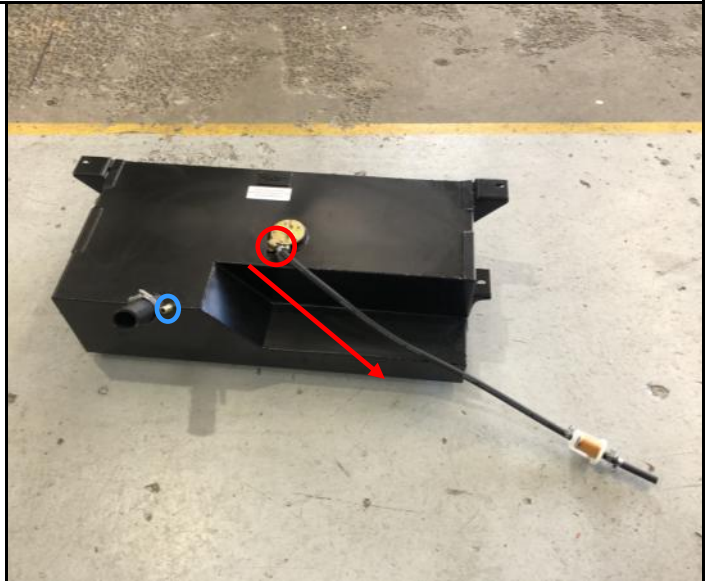


The tank now is to be set up for installation into the vehicle.

Install brass fittings:

- BRASS FITTING - BARB 1/2" x 1/4" BSP
- BRASS FITTING - ELBOW 5/16" x 1/4" BSP FUEL PICK UP

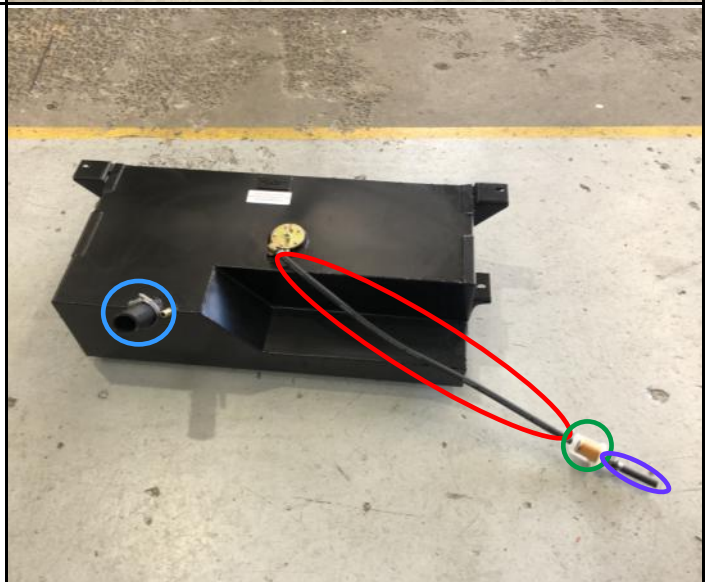
use thread sealant or Teflon paste. Follow the orientation of the brass elbow as shown in the image.



Install hoses and fuel filter onto tank.

- 38mm x 100mm onto filler tube on tank. 38mm hose clamps to secure.
- 8mm x 1500mm onto BRASS FITTING - ELBOW 5/16" x 1/4" BSP FUEL PICK UP. 12-22mm hose clamps to secure
- 8mm x 110mm from FUEL FILTER STRAIGHT. Use 8-16mm hose clamps to secure.
- FUEL FILTER STRAIGHT. Use 8-16mm hose clamps to secure.

Hoses may need to be trimmed to prevent kinking or crushing.



Using an approved lifting device raise the tank into the vehicle.



Now that the tank has been raised into position:

- ⇒ Connect brown wire to VDO and earth the other connection.
- ⇒ Connect 12.5 x 700mm fast fill hose running from the nylon t-piece to the 1/4" x 1/2" BSP TAIL BARB located next to the filler on tank.
- ⇒ Connect 8mm fuel line dangling on tank to fuel pump straight barb.



The filler tube MUST be installed with the correct orientation. If it is not it will foul on suspension components and will not line up properly with t-piece.

Install filler tube onto T-piece using 38mm x 120mm hose and 32-50mm hose clamps. Now connect the other end to the Brown Davis tank using 38mm x 100mm hose and 32-50mm clamps.

SHORT END

T-PIECE



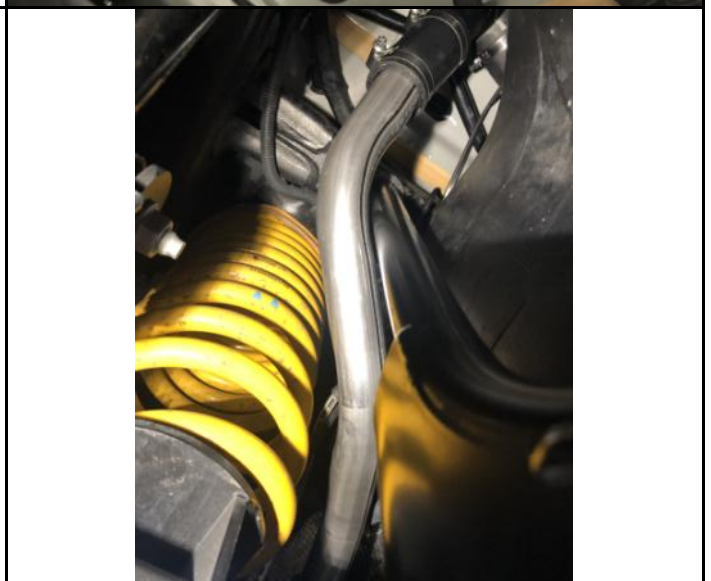
AUX TANK

LONG END



Use this image to check that the filler tube has been installed correctly. The filler tube can rest on the factory tank mounting strut as long as it provides clearance on spring and diff.

NOTE: CHECK CLEARANCE ON SPRING AND DIFF AS THIS IS CRUCIAL TO CORRECT TANK INSTALLATION.



Bolt the tank to the brackets (IG23A1 - 205) that were previously installed to cover mount. Use the supplied M10 hardware and bolt the tank in on both sides.

Shown in red.

Bolt the rear tank brackets to the chassis rails on either side using the supplied M10 Hardware. The exhaust hanger will be bolted in with the passenger side tank bracket using the same bolt. Shown in green.



Check exhaust hanger and exhaust match this image as this is where it needs to be positioned.

Check all clearances on tank and suspension members. The exhaust is prone to twisting. **Do final tighten of exhaust clamp** after having checked all the clearances. Do not forget to check the vehicles complete articulation of suspension with the exhaust by raising and lowering the rear end.

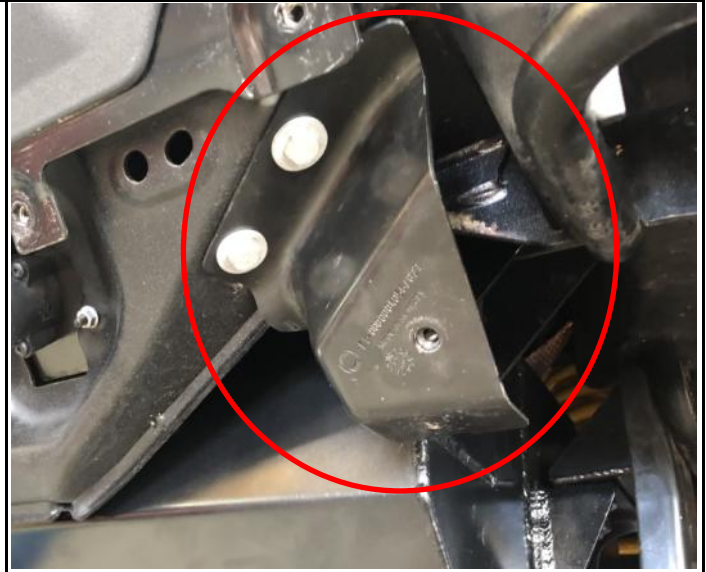
If you have access to a welder, placing a few tacks will help to keep the exhaust in its correct location until the exhaust cement cures fully.



Refit the splash guard and flare onto the vehicle. Install supplied filler cap.



Refit the rear cover brackets.



Refit the cover.

Check over all clamps, hose connections, fittings and brackets making sure that everything has been done up correctly. Do a road test to hear for any rattles or squeaks.



Please follow this procedure to remove any air pockets from the fuel line system:

- Refer to handbook fuel bleeding procedure.
- Start & idle the engine (approx. 1500rpm) for one minute.

Your new tank is now ready to use and enjoy the extended range it offers you

IMPORTANT: Re-check all bolts and hoses 1000km after tank install.

