

Changes to Off Road General Requirements – Article 5. Fuel Tanks

FUEL CAP LOCATION

This requirement is to ensure that the fuel cap is physically protected by structural components of the chassis or safety cage structure. Each fuel cap must be protected in this manner.

A check method is to apply a straight edge across the surrounding chassis/safety cage components in the vicinity of the fuel cap and there should be clearance to the cap itself.

NON-RETURN/ONE WAY VALVE

This is mandatory if the fuel filler is “remote” to the tank and therefore defined as a filler neck. The requirement is that this valve must be able to effectively restrict the flow of fuel out of the tank in the event of an incident should the filler neck be affected by the incident.

This valve must be able to perform this without requiring any external activation, such as using a mechanical valve that must be manually switched between an open or closed position.

The non-return/one way valve must be fitted at the fixed fitting to the fuel tanks itself.

This applies to all Off Road fuel tanks including those that are standard for a production type automobile.

There are many versions of non-return/one way valve’s:

Flapper valve: a flap of ridged or flexible material that is hinged or fixed in such a way that fuel can enter the tank but is prevented from coming back out of the tank, either by a tension device (i.e. spring or similar) or by the weight of fuel trying to exit the tank.

Butterfly valve: similar to a flapper valve, however the flap section may be in multiple pieces and perform similar to butterfly wings.

Ball type: a valve that is essentially a ball contained within a cage or similar that is open in the normal position however as fuel tries to exit, the ball is settled onto a seat either by the weight of the fuel or in a gravity situation preventing the flow of fuel.

FILLER NECK

A filler neck is common in conventional production automobiles where the tank has a fitting to which a filler neck is connected, usually by a hose and clamps, and which locates the fuel cap (filling point) in another location to the tank itself. Essentially any connection for the purpose of filling the fuel tank that is made up of joiners using hose clamps, tubes or other similar connections/materials will be considered a filler neck.

FIXED FILLER

For a tank that has a fixed filler on the tank that is fitted with a suitable leak-proof cap then non-return/one-way valves are not required – however their use in this case is highly recommended.

Example: fixed filler and cap attached directly to the tank, which may be part of a fixed plate assembly to the tank, or a tube welded to the tank with a screw thread or other physical mechanism for the cap:

