

# GB Enterprises Mechanical Fuel Cut Defencer (FCD)

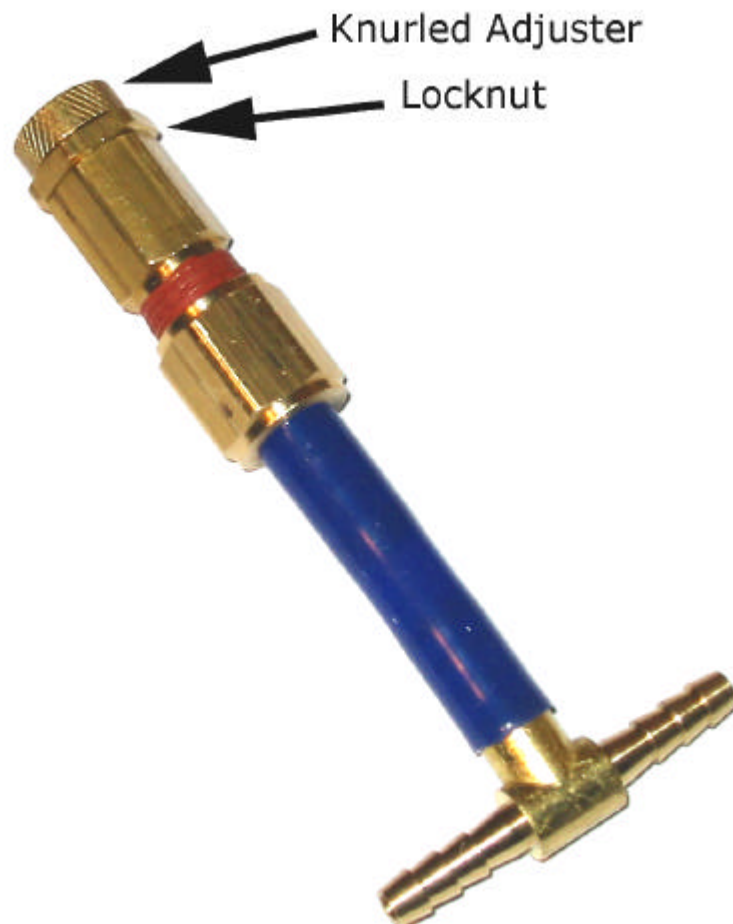
Thank you for purchasing this Fuel Cut Defencer (FCD from here on in!).  
Please read **all** these instructions carefully before attempting to install this valve.

## Cautionary note:

*Increasing the power and performance of any car should be considered carefully. Modifications to your car should only be carried out within and in accordance with the manufacturer's safe operating tolerances. Standard suspension and braking systems can often become compromised if the factory engine power output is exceeded or driving characteristics place constant and heavy load on these areas. In addition modifications to your car should be brought to the attention of your insurance company otherwise you may invalidate your insurance policy.*

*The use of a Fuel Cut Defencer, such as this, places additional stress on the engine, turbocharger and drive train of your car. Excessive boost levels or incorrect set-up and operation of the valve could cause serious damage to any of these components. Old or worn components could be damaged when your boost level is increased beyond factory levels and/or factory boost limit... It is not recommended that the turbocharger is operated outside of its safe operating range.*

**GB Enterprises** accepts no responsibility whatsoever for any direct or indirect or consequential loss, injury or damage to any persons, equipment or property arising from the use or fitment of this FCD.



### **This is What an FCD is:**

An FCD is a small device, which essentially acts as a mechanical air pressure switch. A small ball bearing within the valve is held, under pressure, onto a seat by a spring. Air pressure acting on the ball causes it to lift off its seat once a preset pressure has been reached, as determined by the spring pressure on the ball – which can be adjusted of course. Once the ball has lifted off its seat air can flow through the valve. As the air pressure acting on the ball reduces below the spring pressure, the valve closes preventing air flowing through the valve. In essence no air passes through the valve until the spring or 'cracking' pressure has been reached.

For this application, this means that the ECU (Engine control Unit or Engine management unit) sees only up to the pressure you set the valve to. This means that if your standard ECU had a factory set "boost cut" at 14.7psi (very common), then adjusting this valve to suit will mean that at any pressure above, say, 14.5psi, the ECU will only ever see 14.5psi as the valve will "leak" air off any air above that pressure.

The advantage with the GBE FCD is that UP TO THE PRESET PRESSURE, the ECU sees the correct reading, so you are unlikely to have detonation in the part throttle or low boost ranges. This can ONLY be a good thing!

### **So, here is how you fit and adjust this valve:**

Find the "hose" that runs to the ECU from the inlet manifold. This should be made from rubber. Cut this hose somewhere between the manifold and ECU.

It doesn't matter where so find a convenient mounting place first...

Insert the barbed ends of the "T" piece pictured above into the freshly cut pipe/hose and secure with Zip Ties (supplied).

Fitting wise, that's it! If you so wished, you could now drive normally and the factory boost limit will still be enabled.

If you now wish to adjust this level, (and let's presume your factory level is 14.7psi), you first raise the boost until when you apply full load in a high gear, the boost cut is JUST reached. (See below for how to recognise this). To do this, steadily increase the boost by 0.5psi at a time with a decent quality boost controller – such as the GBE EVO.

Now, loosen the locknut on the FCD and turn the knurled adjuster ANTI CLOCKWISE ½ a turn, retighten locknut and repeat the procedure.

Continue to adjust the FCD until boost cut is no longer reached at full load in a high gear. You have now removed the factory boost cut limit.

### **Is it obvious when I hit the factory boost limit?**

Oh yes!

The engine will cut when the boost limit has been reached, and acceleration will be halted. This can be quite alarming, so it is recommended that testing is performed on closed roads.

***GBE Does not recommend or condone testing or setting up a car on public highways. Dynos and tracks were invented with this purpose in mind!***

***If you have any queries, please do not hesitate to contact us on:***

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