READ BEFORE INSTALLING VALVE

Initial Fitting & Basic Set-Up

This Tillix VNT control valve has been built with a wide variety of vehicles on its use list.

As a result you may find the pressures generated with the stock valve to high for your vehicle. If you turn the valve clockwise (less threads showing) the more boost that will be generated. Turning it anti clockwise will have the opposite effect.

If the boost pressure is too high with the valve wound out the easiest and best way to fine tune the valve to suit your own vehicle and desired boost pressure is by removing coils from the spring which in turn reduces preload on the piston and sealing surface.

A pair of side cutters is sufficient for this task. Remove one coil at a time until you have found the nominal length to suit your vehicle. It is recommended to have a minimum of 2-3mm of thread overlap inside the valve to prevent leakage. It is not necessary to have any type of sealing compound or tape between the threads, but if you choose to use this it will not do any harm.

It is advantageous to partially flatten the end of the coil if it is necessary to cut it on a sanding belt or file so it sits snugly inside the valve, but is not 100% necessary.

If the spring has caught up on one edge or is not sitting properly inside the valve, issues can and will arise with boost jumping large amounts with only a small adjustment of the valve.

If this occurs disassemble the valve and spin the spring counter clockwise on its seat until you find the point at which it sits straightest and reassemble. Once the valve is correctly set for your application, mark it with either a paint pen or some other marker so you have a point of reference in case of future modifications (it gives you a good reference point).

A needle valve should be used in conjunction with this valve on some vehicles to allow spool up control.

The needle valve supplied with this kit is of a one way type. Note the arrows on the valve, they must be pointing towards the vacuum source, or away from the resonator box.

The Tillix valve is also directional . A small piece of silicone hose has been placed over the boost inlet end for easy identification.

Common rail vehicles are gernally not effected by the low down boost generated with the Tillix VNT control valve, But older Di Patrols can suffer limp mode as a result. It is advantageous to have a needle valve installed to give fine tuning ability should your vehicle require spool up adjustment, or if you find the fuel economy needs to be improved upon lowering the spool rate can definitely help in this regard.

It is ideal to fit the Tillix valve onto a boost pickup point that is not being used for any other purpose ie, boost gauge or map sensor.

Although it is unlikely, there are circumstances where the gauge can read incorrectly due to the vacuum and boost balancing out when the Tillix valve is opening during operation.

However, if you have purchased the boost adaptor and intend to use it as the boost input for the Tillix system, then ensure there is a decent length of hose from the adaptor until the first T-Piece.

Welding the supplied fitting onto the intercooler pipe (Most exhaust shops will do this for you for less than $20) Would be a better option, Then use the adaptor as the pickup point for your boost gauge.

With the fittings supplied in the kit cable ties are not necessary on any of the spigots, but they are provided in the kit if you would like to use them anyway.

The sizing of the spigots and hose has been selected carefully to allow a perfect hassle free seal.

The larger end of the Tillix valve is the boost entry end. You will find a small piece of silicone hose attached to quickly identify this.

Fine Tuning of the System to Suit Your Vehicle

There are certain aspects of the system that can be altered which change the way the entire system works. The length of hose, or any type of dampening filter leading up to the Tillix valve can drastically effect the performance of the system in regards to the boost response around the valve opening point.

A very short length of hose will give instant response, but can lead to some spiking and oscillation of the boost as a result.

A long length of hose, or a dampener can give very flat boost control with some reduced speed at which the valve opens.

It is up to the end user to determine what works best for your own situation.

I would recommend somewhere around 10 cm of hose leading to the valve as the starting point and shortening it from there to meet your expectations.

The needle valve operation is very simple. Close it tight for maximum response, open it to slow down the spool up rate. Finding the happy medium for your own vehicle takes trial

and error, there is no set best way to set either valve.

The needle valve is directional, ensure the arrows point towards the vacuum source.

Trouble-Shooting Your Vehicle

Please look through both the Di and CRD pictures while doing your install. Both systems operate in the exact same manner. It is just some minor variations in where the vacuum source comes and intercooler routing from that differs.

Almost all problems associated with VNT boost control are attributed to the setup of the pneumatic system.

1) Boost Oscillation:

#The most common cause of this is a hose length leading to the Tillix valve that is too short for the system.
#Some boost gauges, carry high needle speed and can show an over boost situation when it does not actually exist.
#The piston has become sticky due to residue built up between it and the sealing surface area.
#The spring has not been seated correctly on its base causing the piston to move on a angle rather than straight.

2) Low Boost

#Incorrect installation and orientation of the system's parts is the most likely cause of this problem. Recheck the installation pictures to ensure everything has been installed in the correct manner.
#The Tillix valve does not have enough tension on it to seal the piston against its seat. Screw the valve clockwise to increase base tension.
#Leak between vacuum pump and Tillix valve. Check all pre-existing lines and ensure there is no cracks/splits/leaks at joint etc… If in doubt replace lines with new silicone provided in the kit.
#Use a vacuum gauge to ensure there is 28-30”HG available to the system at the entry to the Tillix valve.
#As a final check, connect the vacuum source directly to the turbo and check the VNT actuator arm moves to its stopper. If it does not then the problem is turbo related.

3) High Boost

#If the Tillix valve has too much pre-tension to achieve your desired boost pressure, one or more coils can be cut off its base in order to lower the preload on the spring thus lowering the point at which the boost will push it off its seat.
#If the valve is installed the wrong way around, it will not allow boost to push it off its seat, causing an overboost situation. Ensure the large end of the Tillix valve is facing the boost

input side of the circuit.

4) Boost Increasing or Decreasing over the RPM range.

#It is normal for the boost to increase/decrease a couple of psi across the rpm range 1000-4000rpm).
The location of the boost input to the Tillix valve can play a large role in the overall amount of creep or loss of boost during acceleration.
#If the boost creep is beyond your expectations, move the boost input to the intake side of the intercooler with a short hose length ensuring the pickup is on a straight piece of the intercooler pipe and not on or within 25mm of a bend.
#If the boost drops beyond your expectations, move the boost input to the oulet side of the intercooler and not on or within 25mm of a bend.

Contact Details & Feedback

If you require any additional troubleshooting assistance, please contact me on the details provided.

If you have any problems or would like to leave feedback please email us directly.

Keep an eye on our facebook page for updates, dyno graphs, guides, etc...

If the matter is urgent *you can contact me through phone. Please send a text message if I do not answer and I will call back as soon as possible.*

Please be reasonable with phone calls, text messages are fine at any time.

Regards...

Lindsay

Tillix Performance & Tuning

TILLIX PERFORMANCE AND TUNING

M 0450 756 515
E sales@**tillix**.com.au
https://www.facebook.com/**TillixPerformance**
tillix.com.au