
STRATIFIED 3 PORT ELECTRONIC BOOST CONTROL VALVE

Plug and Play 3 Port Electronic Solenoid Boost Control Valve

Installation and User Guide

Thank you and congratulations on the purchase of your new Stratified 3P EBCV. This document should be followed to ensure safe and proper installation and operation of your new device.



WARNINGS AND WARRANTY – PLEASE READ CAREFULLY

ALL parts are sold for OFF ROAD RACE-ONLY ground vehicle use only.
Aftermarket systems interacting with engine function are not for use on pollution controller vehicles.
Alteration of emission related components constitutes tampering under most local emission regulation guidelines and can lead to fines and penalties.

Limited Warranty

This Stratified product is warranted against defects in materials and workmanship for ninety (90) days from date of purchase. During the warranty period, Stratified will repair, or at its option replace at no charge, components that prove to be defective. The product must be returned, shipping prepaid, to a Stratified facility. This limited warranty does not apply if the product is damaged by accident or misuse. The foregoing warranty is in lieu of all other warranties expressed or implied including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. Stratified Automotive Controls LTD. is not responsible for any fines, injuries, or damages incurred as a result of the installation or use or misuse of our products. It is the complete responsibility of the purchaser of such products to ensure that they are used in a legal, safe, and appropriate manner.

DISCONNECT THE NEGATIVE BATTERY TERMINAL BEFORE PERFORMING ANY ELECTRICAL WORK ON YOUR VEHICLE. IF YOU DO NOT FEEL COMFORTABLE MAKING THESE MODIFICATIONS, HAVE THEM PERFORMED BY A PROFESSIONAL.

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1. Introduction and Precautions

The 3 Port Electronic Boost Control Valve (3P EBCV) is designed to be a plug and play replacement for the existing boost control valve in your vehicle. This means that it will plug into the OEM harness and not cause any check engine lights to be triggered.

The 3P EBCV can be setup in either interrupt (3 port) or bleed (2 port) style and both routing styles are shown below in **Section 2**. The OEM boost control system is setup in bleed (2 port) mode.

When installing the 3P EBCV, the OEM boost control calibration should be changed in order to maintain proper boost control. **Tuning IS required to operate this valve safely and effectively. This is ESPECIALLY true when installing this valve in interrupt (3 port) mode. After installation EASE into the throttle and make sure the boost is responding as expected and the turbocharger is not over boosting.**

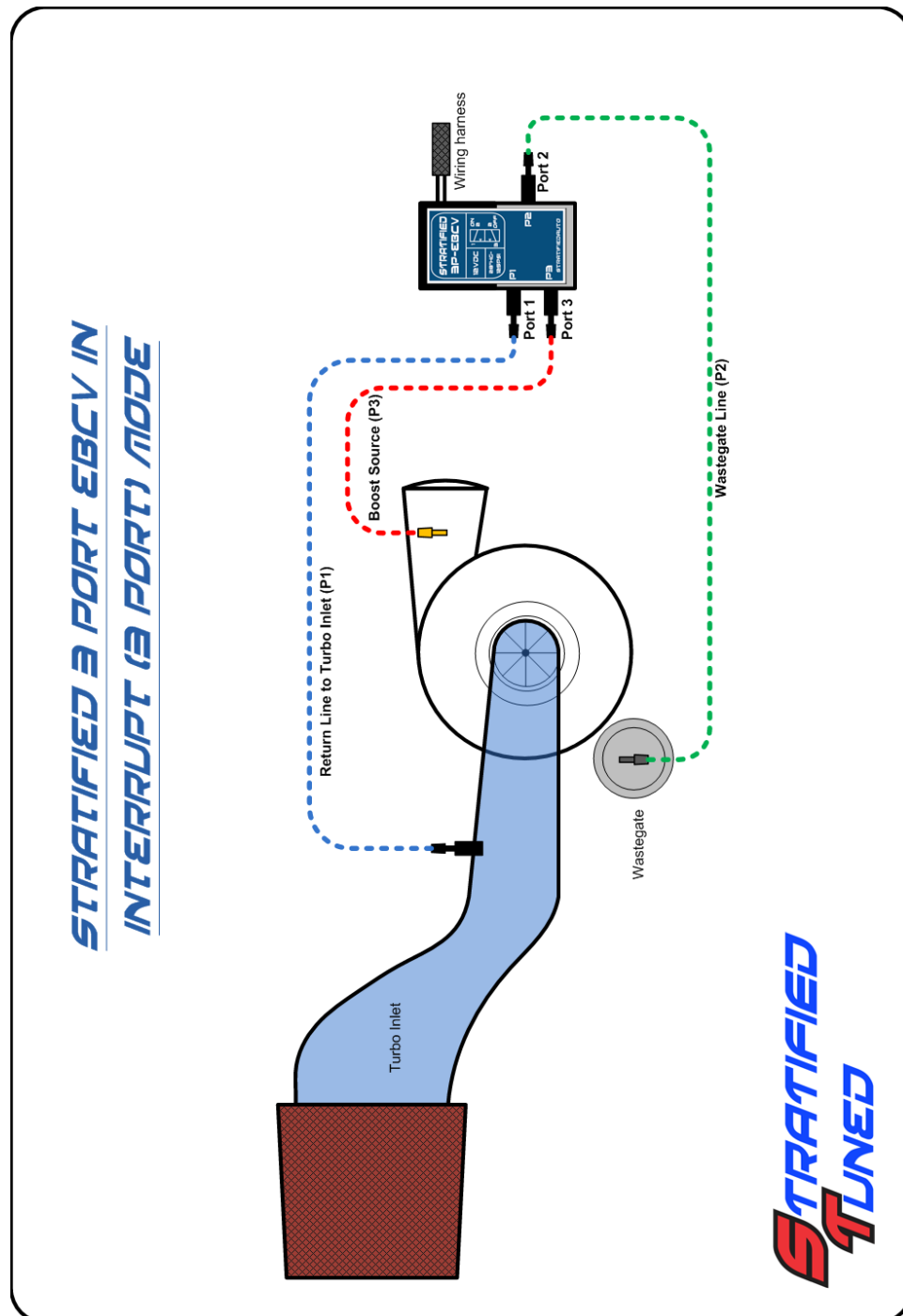
This valve includes a 3M multi lock fastening system for mounting. Included with this valve are also 6 locking clamps that can be used to secure vacuum lines.

We recommend that 7/32" (5.5mm) inner diameter vacuum line is used with this valve.

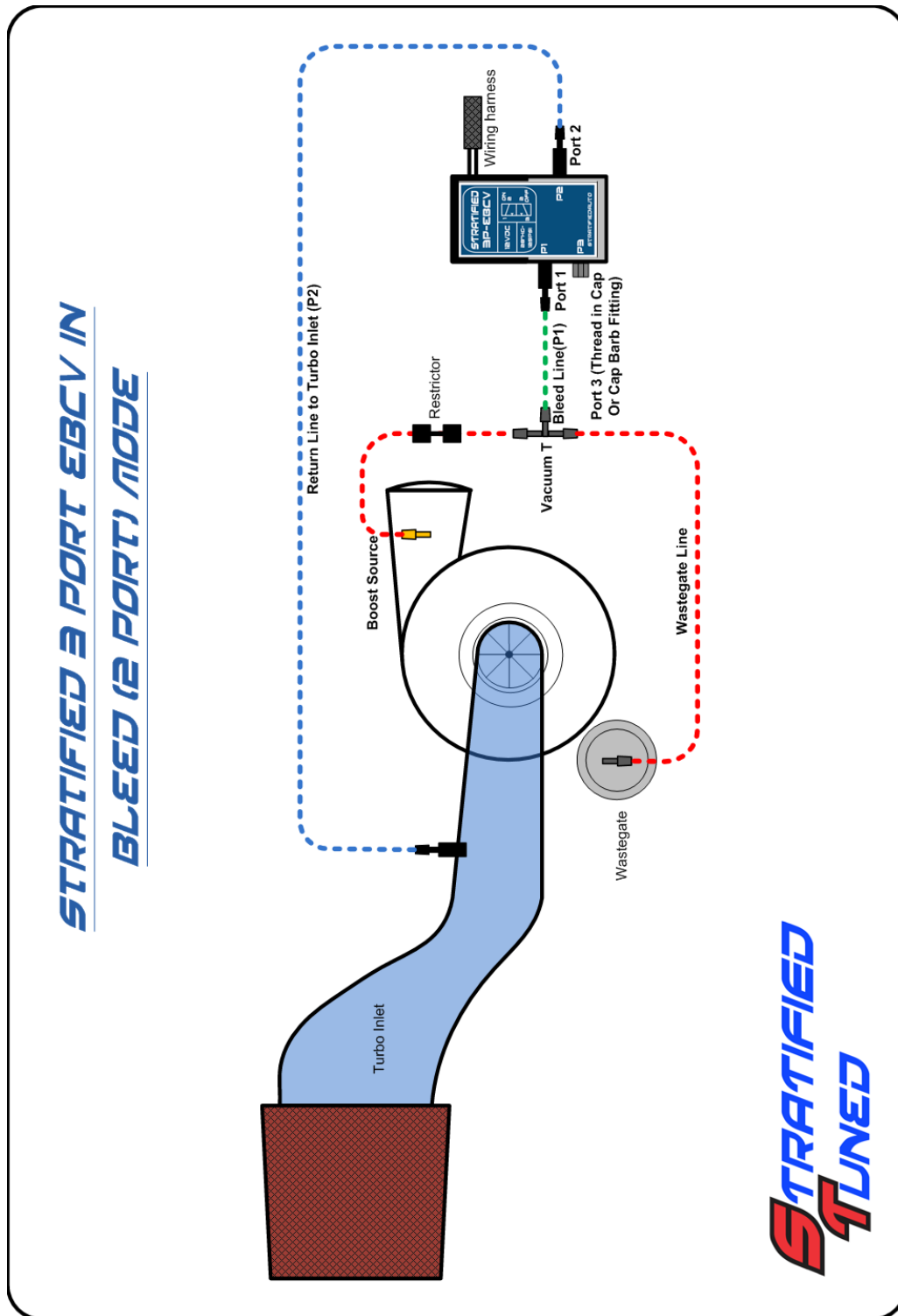
This valve is heat sensitive and rated for 125 degrees F (50 degrees C) under continuous use. For this reason, the valve should not be mounted directly on the engine block. It is preferred that the valve be mounted away from direct heat such as to the battery box or other plastic trim in the engine bay.

2. Quick Install Guide

1. 3P EBCV Installation in Interrupt Mode (3 Port)

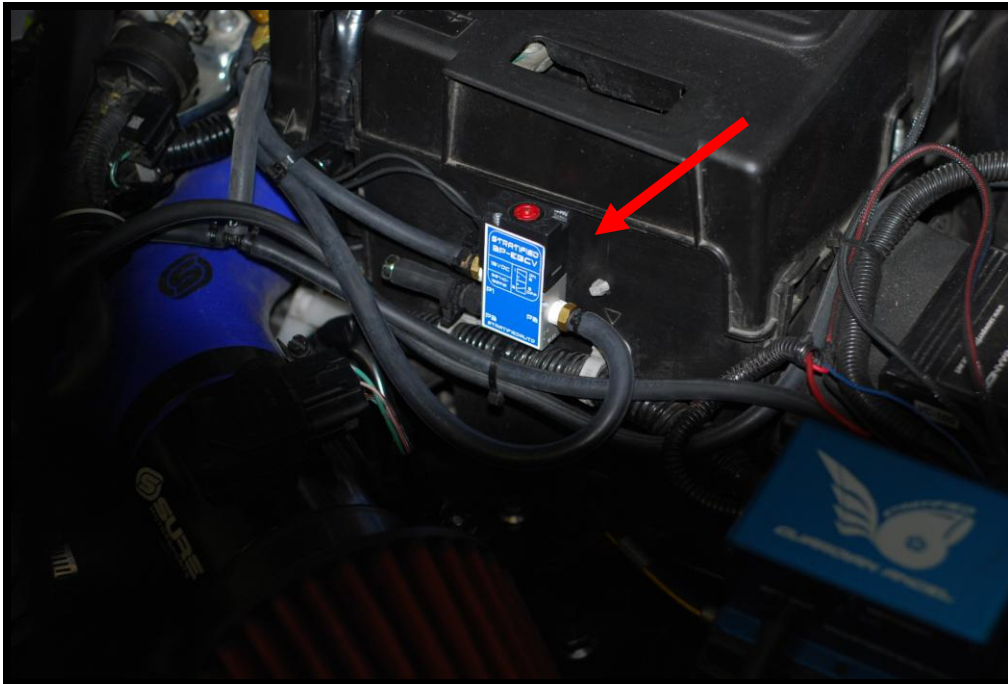


2. 3P EBCV Installation in Bleed Mode (2 Port)

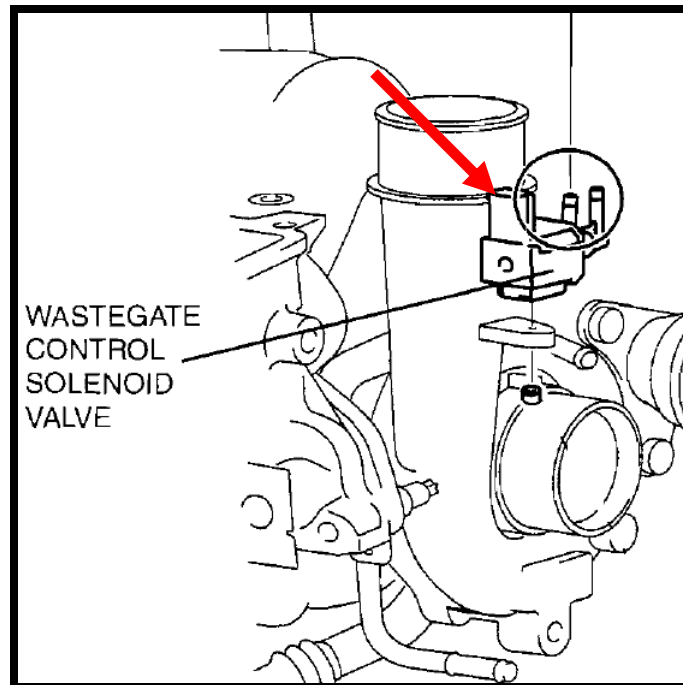


3. Installation Instructions

1. Park the vehicle safely and remove the negative battery cable.
2. Find a suitable location where the 3P EBCV will be mounted. The unit comes with an 18 inch (~45cm) long wiring harness so there is some flexibility here. The unit is rated for under-hood temperatures (up to 125 degrees Fahrenheit - 50 Celsius), however it should be placed away from direct heat sources such as the exhaust manifold or turbocharger. For trouble free operation it should also be placed away from water and water drains and petroleum and alcohol products. A suitable location is on the vehicle battery box or plastic trim that is flat. Also remember that you will be routing vacuum lines to this solenoid so place it in a convenient location.



3. You will first need to located and disconnect the OEM electronic boost control solenoid electrical connector. The OEM solenoid is attached to the OEM turbocharger compressor housing. The diagram below shows the connector.

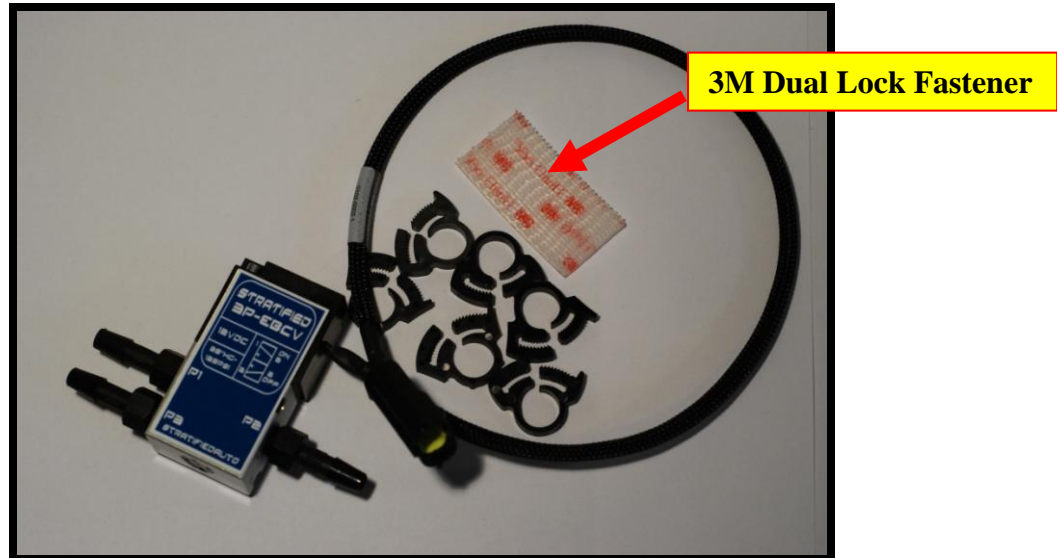


4. Disconnect the OEM solenoid connector and plug it into the connector on the Stratified 3P EBCV as shown below. A click should be heard when positive connection is made.



5. You will note that on the back of the 3P EBCV there is a strip of 3M Dual Lock fastener attached. Inside the packaging you will find a loose piece of the same 3M Dual Lock fastener. After you have chosen a location, use brake cleaner or alcohol

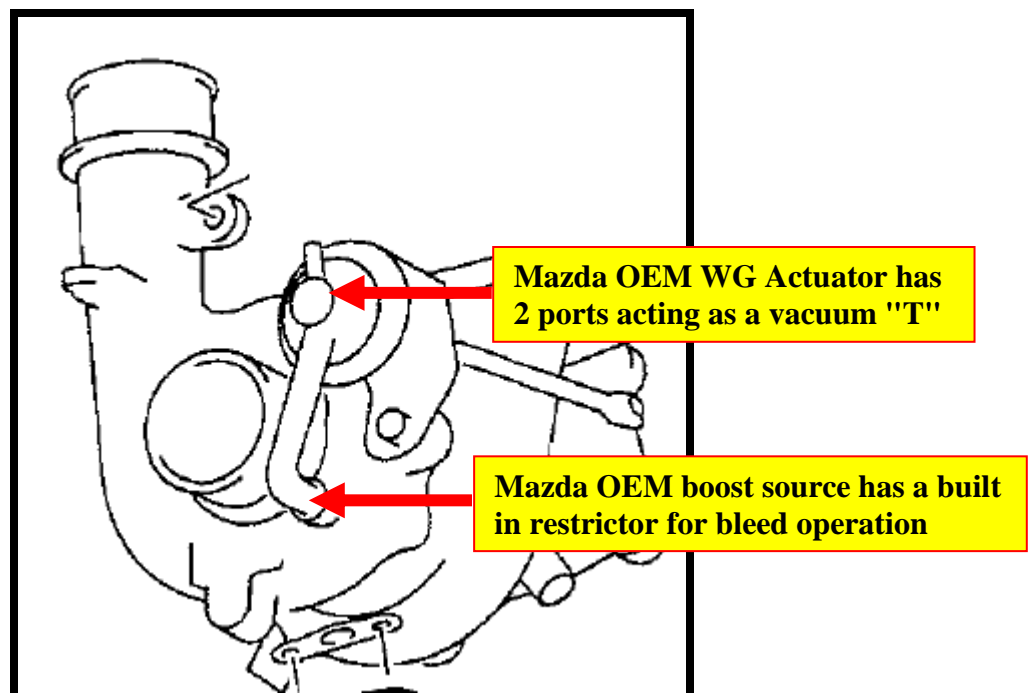
to clean the surface. Oil or even plastic dressing will prevent the 3M fastener from properly mating to the surface.



6. Peel away the protective layer from the loose piece of 3M dual lock and attach it to the cleaned location by pressing evenly across its surface.
7. The solenoid can now easily and securely be attached and removed from this location without permanently marking or damaging the surface.
8. Now it is time to route the vacuum lines. The routing is shown in **Section 2** of this document - **Quick Install Guide**. A couple of tips:
 - a. The 3P EBCV can be used with external or internal wastegates.
 - b. We recommend using 7/32" (5.5mm) inner diameter vacuum hoses.
 - c. Route the vacuum hoses away from direct sources of heat such as the exhaust manifold.
 - d. Use the provided locking clamps shown below to prevent vacuum lines from popping off under boost pressure. This is very important as a blown line can cost you your engine!



- e. The clamps can be removed and re-installed by hand. If they are very tight, removing them will be much more difficult. Ensure they are snug but not overly tight on the vacuum lines.
 - f. When choosing a boost source, you can choose the compress housing or the manifold depending on your turbocharger setup. Ensure this source is reliable and leak free.
9. The MazdaSpeed/Mazda MPS vehicles run in bleed (2 port) mode in their OEM configuration. The OEM turbocharger has a restrictor built into the boost source nipple on the compressor housing. Also note that the wastegate actuator itself has 2 ports. These just act as the vacuum "T" in the diagram.



10. Once you have routed the lines, you MUST ensure that boost control is maintained. If you are simply replacing the OEM solenoid and continuing to run in bleed (2 port) mode, you may not need to re-tune but you must check that your boost levels are the same as before. If you are switching to interrupt (3 port) style control, re-tuning IS REQUIRED.

4. Specifications

The Stratified 3P EBCV is designed to be installed in the engine bay; away from direct sources of heat, water, and damaging chemicals such as petroleum products or alcohols. Damage caused by exceeding the operating conditions listed below or exposing the 3P EBCV to damaging substances will void the warranty.

Media	Air or inert gas
Pressure range	0.28" Hg vacuum - 125 psig
Ambient temperature range	32 to 125° F (0 to 50° C)
Coil temperature rise (any voltage)	81° F (45° C)
Power consumption	4.5 watts
Response time (on/off)	.012/.010 (DC) sec.
Voltage tolerance	Plus 10%, minus 15% of rated voltage
Coil voltage	12VDC
Lubrication	None required, factory pre-lubed