Variable Brake Booster Controller Installation Guide

NA/NB, NC, ND, FD3S, S2K, BRZ/FRS

and Universal Kits

Note: Please read complete install guide before turning a wrench!

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By installing this product on a vehicle, the purchaser expressly acknowledges and agrees to assume all responsibility resulting from the use or misuse of this system, or components contained within it. SakeBomb Garage LLC will not be held liable for any damage, injury, or death, consequential or otherwise, due to equipmentklbaniqued@yahoo.com failure or poor-performance after installation. The purchaser assumes all risk associated with the use or misuse of tmotorsports

his system.

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By installing this product the purchaser expressly affirms that they are relying upon their own skill and judgment in selecting and purchasing these goods as suitable for purchasers' intended use. Purchaser understands and agrees that no officer, employee, or dealer for SakeBomb Garage LLC has the authority to make any statement contrary to the terms of this disclaimer and agreement.

Installation

The brake system on any vehicle is a safety device. It is strongly recommended that any personnel performing brake-related replacement or maintenance operations should be competent and certified, using proper tools and equipment.

What's in the Box?

Contents:

- **1 VBBC**
- **1 Vacuum line with Check Valve and Hose Clamp pre-installed *May differ from picture***
- **2 Hose Clamps**
- **2 Plugs**
- **2 barb fittings * straight or 90 dependent on application***
- **Instruction Manual**

Tools Needed:

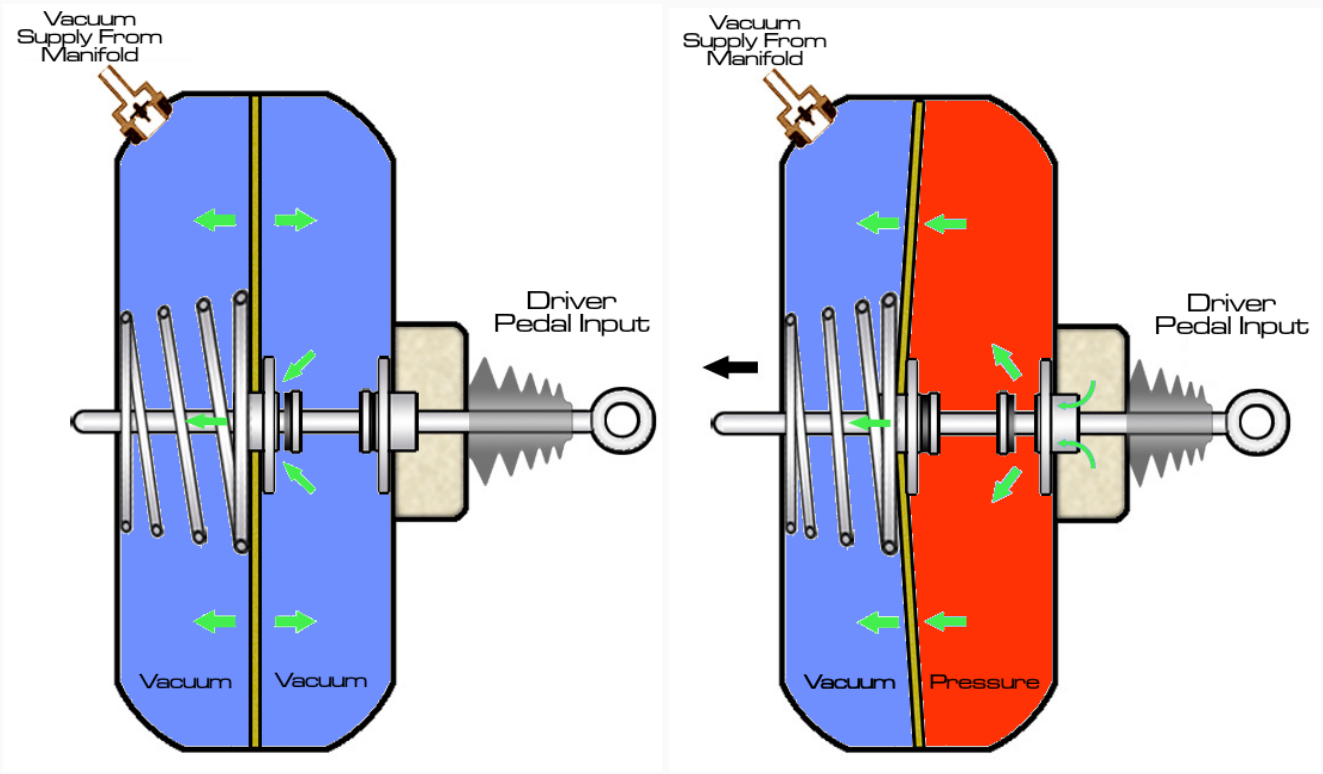
- **Hose clamp pliers**
- **Flat blade Screwdriver**
- **Razor blade**
- **11mm open end wrench**
- **13mm open end wrench**
- **6mm Allen Key**

- **Teflon tape or other thread sealant**

Sakebomb Garage is excited to announce a revolutionary new product in brake system tuning! The brake booster is the single biggest contributor to pedal feel and we've found that it is a largely unexplored tuning area.

As the pedal is applied, the vacuum in the right side of the booster is released and the absolute pressure rises. This causes a pressure differential across the diaphragm and causes a force to be added to the driver's effort. The ratio of the driver's input force to the total output force is called the gain of the booster. As the pressure on the right side of the booster increases it will eventually reach atmospheric pressure at which point no more pressure can be added to that side. This point is called "runout" and is the most force that the brake booster is capable of producing.

OEMs spend a lot of time tuning the runout of the booster to allow the brake system to be easy to modulate. By placing the typical ABS engagement pressure slightly past the point of runout the brakes are very easy to modulate. It takes a small amount of force to get to 90% of max braking and then a large increase past that to get to 100%. This means that if the driver applies any amount of force remotely near the runout force they will be very close to the max braking capacity of the car.



To fix this situation we have designed a variable brake boost controller. By regulating the vacuum levels of the booster, we can adjust both the booster's gain and the runout point of the booster. This allows each driver to fine tune the pedal feel to best suit their driving style and car's modifications. By moving the runout point to just below the car's lockup pressure, the

brakes will be much easier to modulate. The result is similar to changing the master cylinder sizing but that typically involves removing the booster which leads to much more difficult modulation. Just like the launch is critical for a drag racer, the first instant of the braking zone is critical for the braking distance of a road racer. At the start of the braking zone you can simply stab the pedal and use the runout to get extremely close to max braking. With our variable brake boost controller you can easily fine tune your brake pedal performance to match the exact surface conditions and modifications to your car.

The Variable Brake Boost Controller can mimic anything from a smaller diameter brake booster, a larger diameter master cylinder fitted to the stock booster or a smaller diameter un-boosted master cylinder (while maintaining the drivability benefits of a well tuned runout point). The brake booster is an under-appreciated tool of aftermarket vehicle development but is the single most powerful knob within the brakes tuning toolbox.

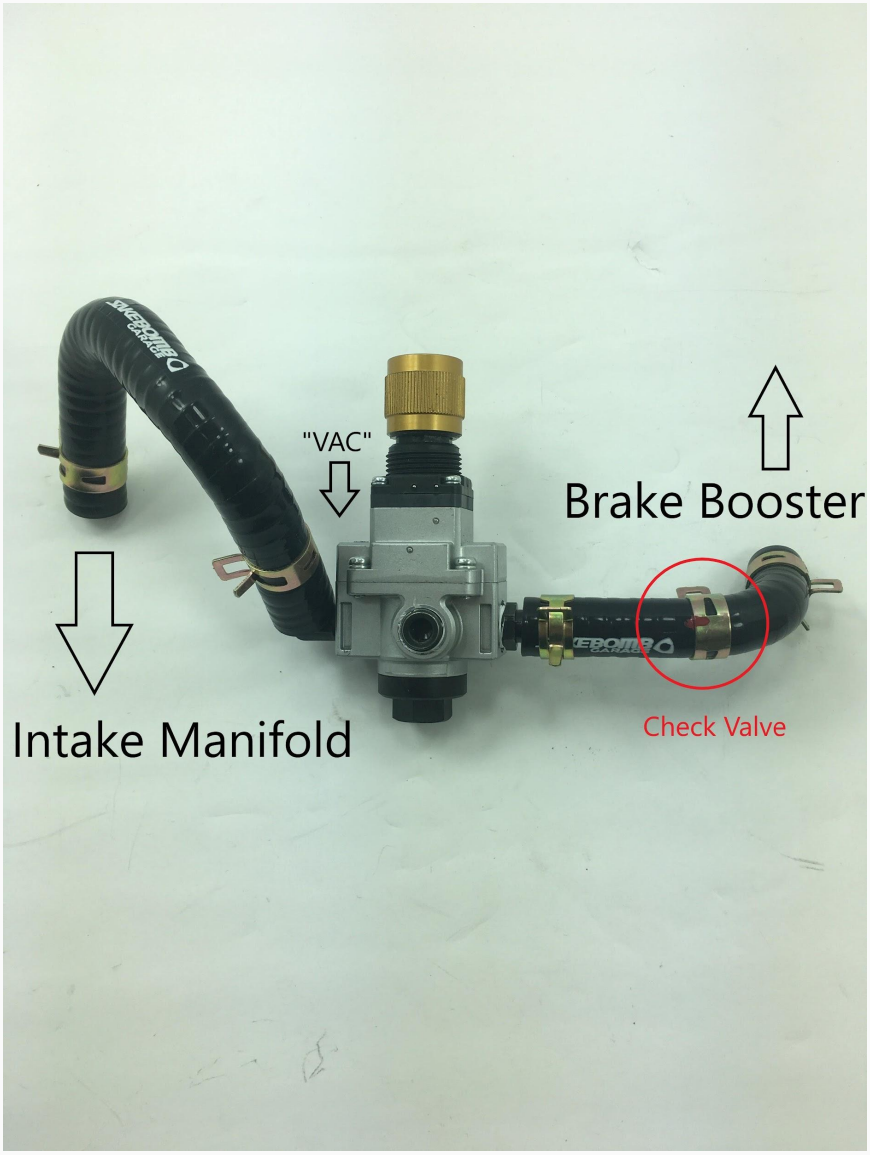
To see for yourself what the product does simply get in your car and start it up. After letting the engine run for a bit take your foot off the brake pedal and turn the car off. Slowly press the pedal a few times and you will notice the pedal becoming firmer with each stroke. Each apply the vacuum level in the booster is falling both decreasing the gain and runout point of the booster. Our Variable Vacuum Boost Adjuster allows you to pick any of the pedal curves you've just felt plus anywhere in between.

Installation Procedure

IMPORTANT: Do NOT touch the hose clamp marked with red paint pen. This is securing the check valve and if moved could cause a loss of brake boost while driving.

1. **The Variable Brake Booster has four ports on the lower housing. Install a barb fitting on the port labeled "VAC" and the port 180* across from it. The threads on both fittings will require thread sealant.**
2. **The two remaining ports will need to be sealed with the two included plugs with a 6mm allen key. The threads for both plugs will require thread sealant.**
3. **Locate the vacuum line with the hose clamp pre-installed. This line contains the check valve and is vital for the operation of the system. The line has a small red paint pen mark to note the orientation of the check valve.**

4. **The red mark will face towards the VBBC unit. It will be installed on the port on the side that does NOT have the "VAC" marking. (Such that if you blow through the hose from the brake booster attachment you can blow through the check valve and the VBBC unit)**
5. **Install the two hose clamps onto the vacuum line prior to installing.**
6. **Install the other vacuum line to the opposite side of the Brake Booster Valve with the "VAC" lettering. There is no orientation for this particular vacuum line only route the line for cleanest installation.**
7. **The first vacuum line with the check valve (red mark) will route to the cars brake booster vacuum nipple, originally connected to your intake manifold.**
8. **The second vacuum line will then be connected at the intake manifold nipple. Depending on how the original lines were routed you may need to extend some of the vacuum lines.**



9. **The Brake Booster controller knob contains a locking mechanism to prevent unwanted changes. To adjust, pull up on the gold knob and twist in the desired direction. Push down again to lock in place.**

Installed on Honda S2000.

10. **SakeBomb Garage strongly recommends to set the valve to max boost and tune down in small increments. This prevents you from accidentally removing too much boost and causing a dangerous braking situation.**

Installed on ND

We at SakeBomb Garage would like to thank you again
for choosing us, and for your continued support.
If you need assistance don't hesitate to contact us at info@sakebombgarage.com