

PERRIN

2015+ WRX RECIRC BLOW OFF VALVE

2016-05-25

Thank you for purchasing this PERRIN product for your car! Installation of this product should only be performed by persons experienced with installation of aftermarket performance parts and proper operation of high performance vehicles. If vehicle needs to be raised off the ground for installation, the installer must use proper jacks, jack-stands and/or a professional vehicle hoist for safety of the installer and to protect property. If the vehicle is lifted improperly, serious injury or death may occur! Please read through all instructions before performing any portion of installation. If you have any questions, please contact our tech department prior to starting installation.

GENERAL MODIFICATION NOTE

Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components

SPECIAL NOTES:

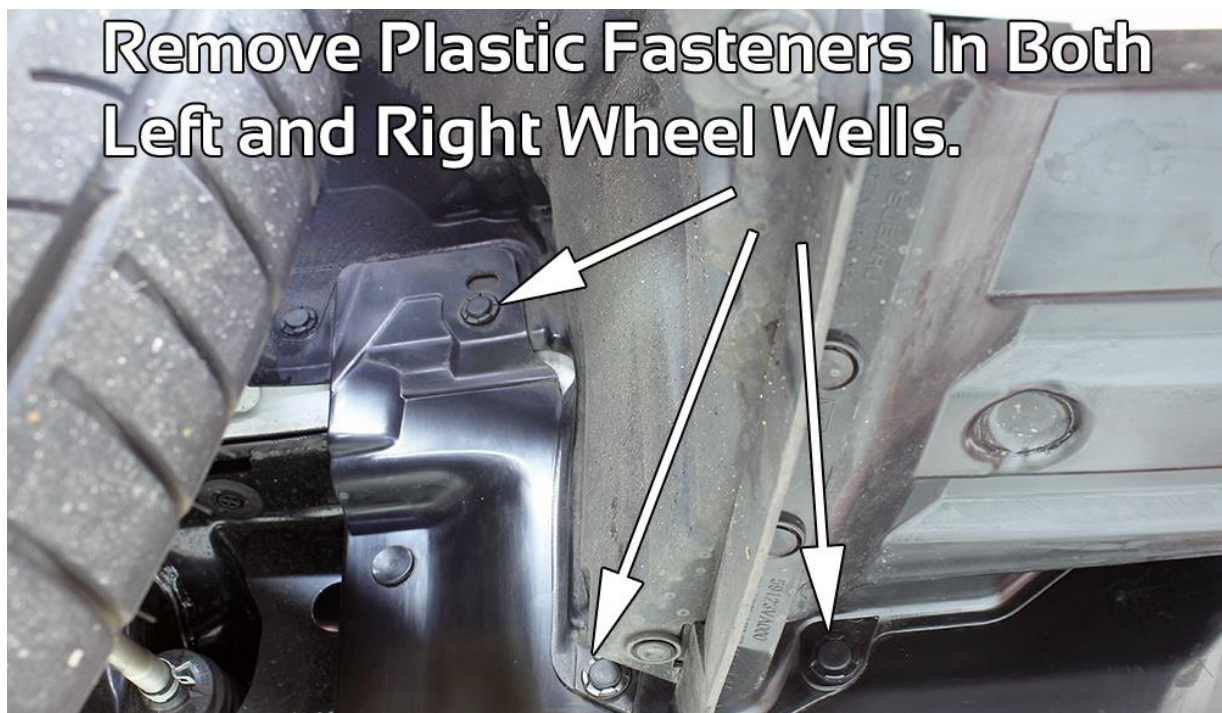
- Do not "tighten" blow off valve to increase holding pressure. The blow off valve will hold unlimited boost no matter what spring setting you have (even without a spring installed!!).
- Tightening cap with factory flow control settings will limit the amount of piston travel during blow off, which can lead to compressor surge.
- Before adjusting blow off valve, read through tuning tips below.

Parts Included with the PERRIN WRX Recirc Blow off Valve:

- (1) PERRIN WRX Recirc BOV
- (1') 1/4" Hose
- (1) 1/4"-1/4" Connector
- (1) Zip Tie

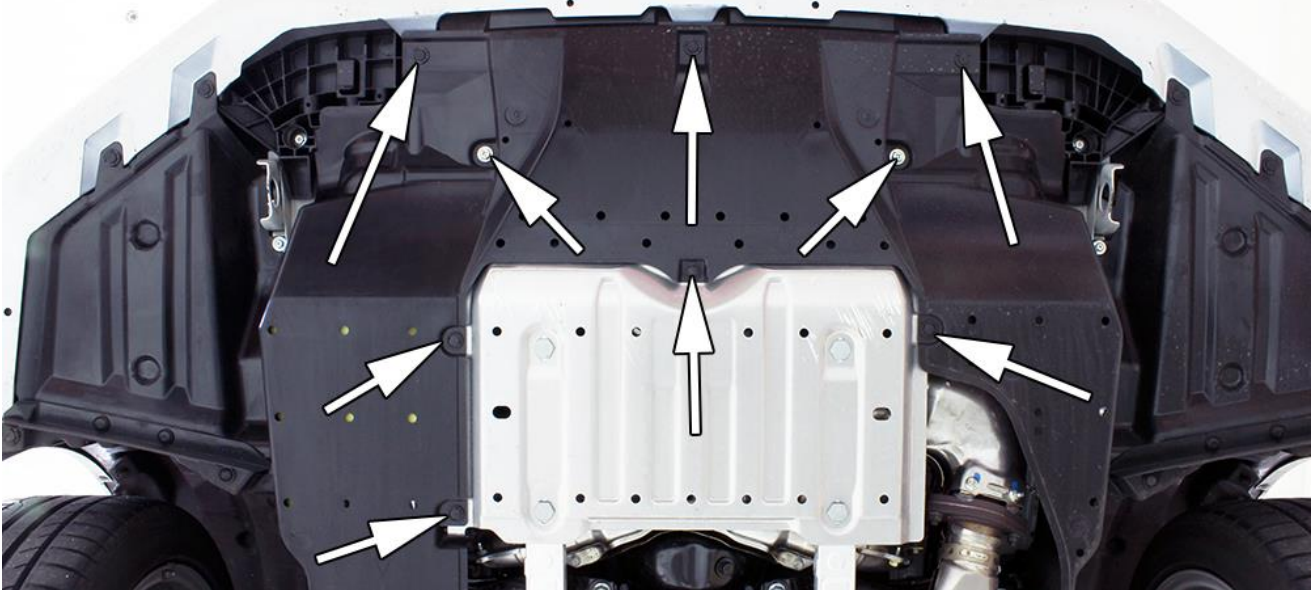
Installation

1. Raise vehicle off ground using vehicle hoist or proper jack and jack stands. Never support vehicle with jack as death or injury may occur.
2. Using proper panel removal tool or flat head screw driver, locate and remove (3) plastic fasteners in each left and right wheel well. See picture below.

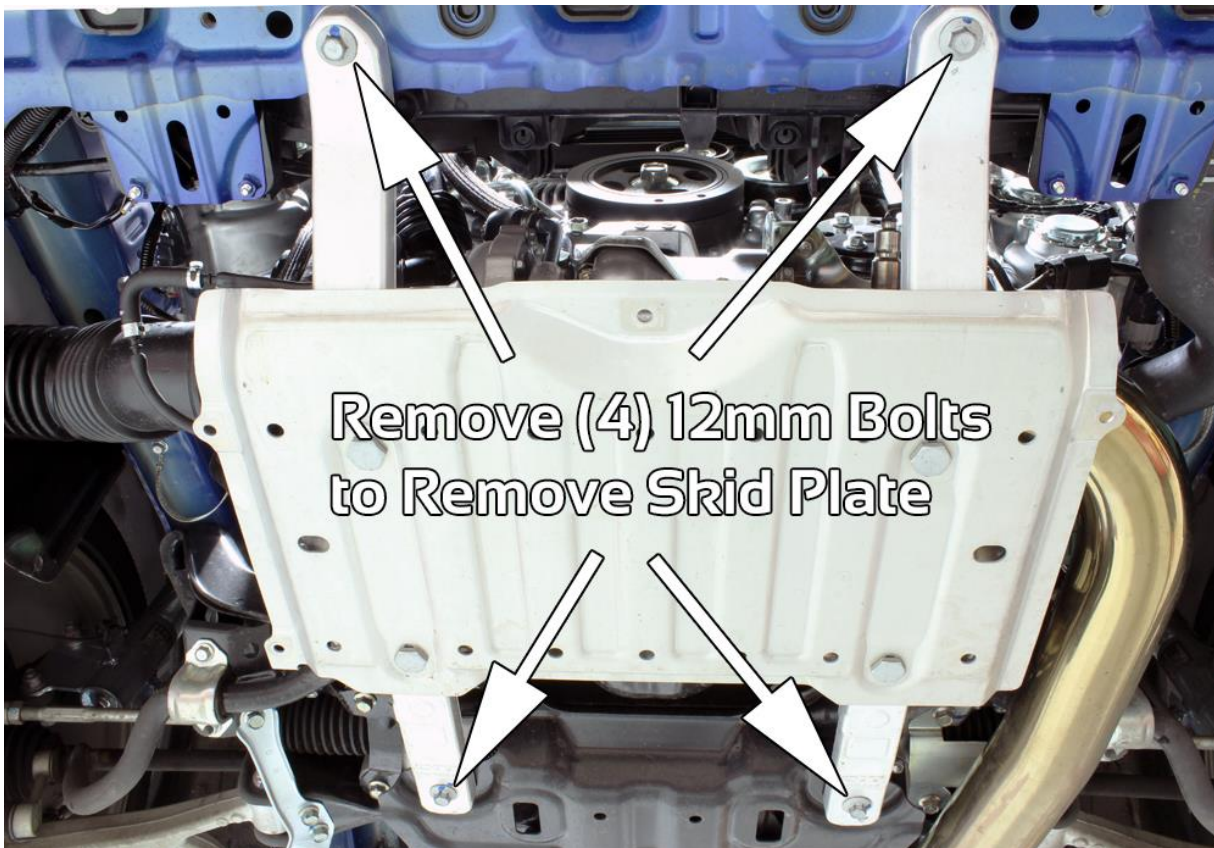


- Using proper panel removal tool or flat head screw driver, locate and remove (7) plastic fasteners and (2) 12mm headed bolts from lower portion of splash guard. See picture below.

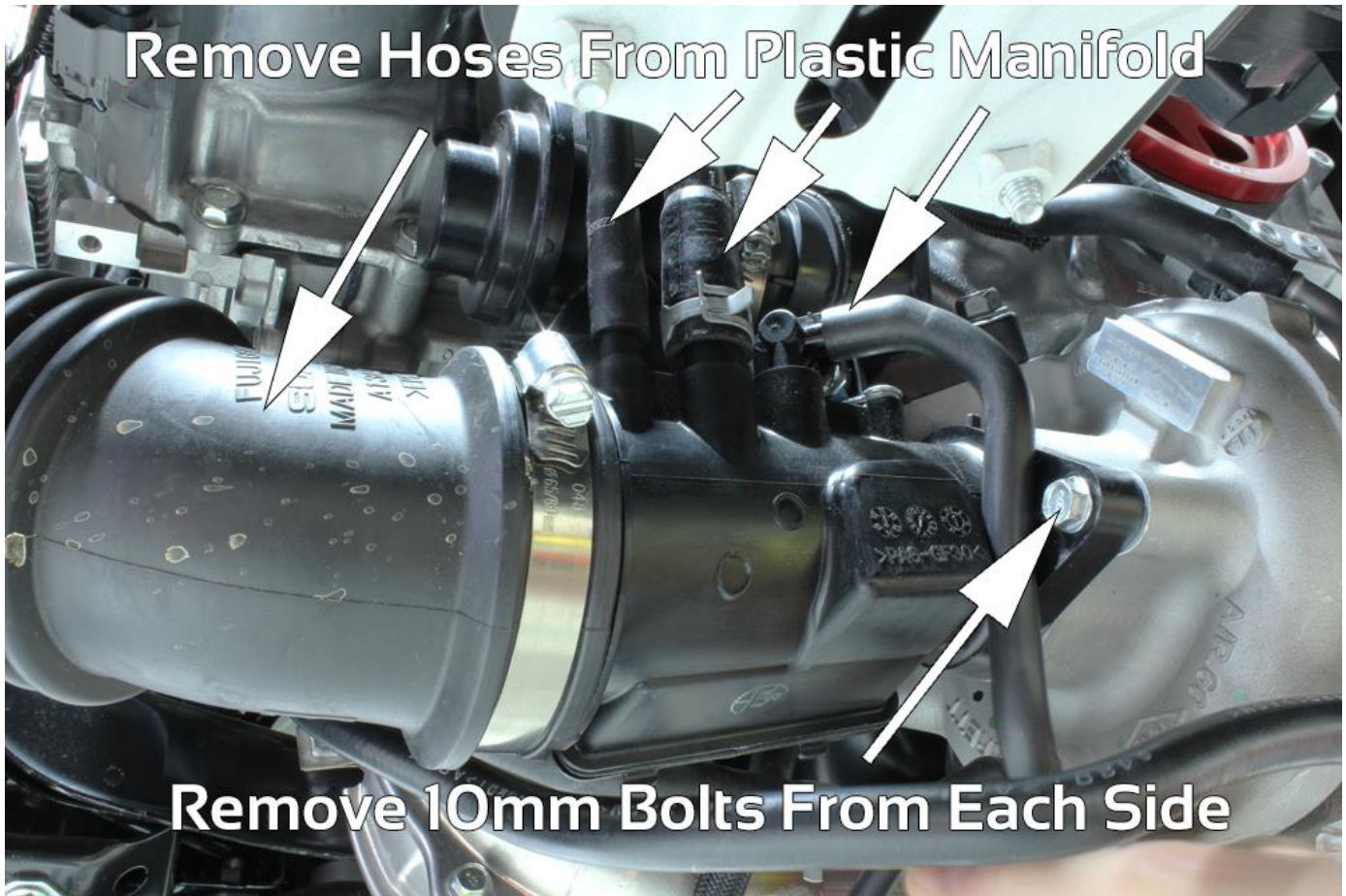
Remove (7) Plastic Fasteners and (2) Bolts



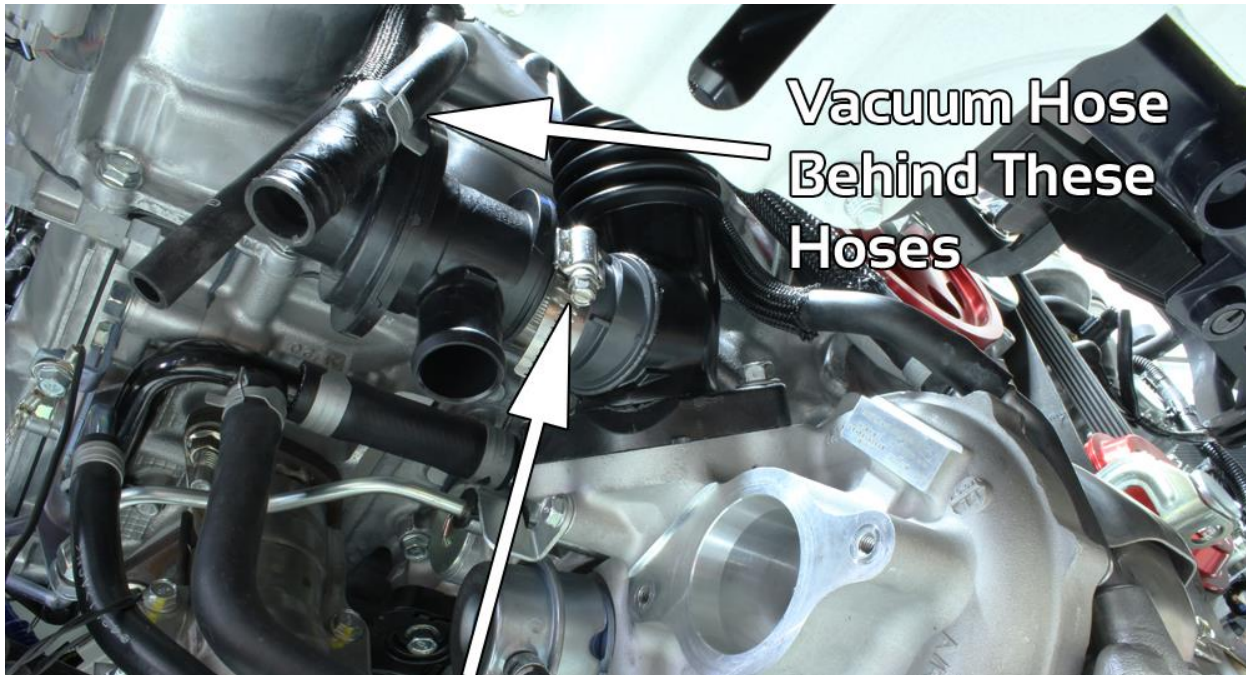
- Remove splash guard from car and move off to the side.
- Remove (4) 12mm bolts holding skid plate to chassis and set skid plate aside.



- Locate rubber intake hose and three smaller hoses shown in picture below. Remove from plastic manifold bolted to turbo.
- Remove (2) 10mm bolts securing plastic turbo manifold to inlet of turbo.



8. Using long needle nose pliers, pinch large hose clamp securing OEM recirc valve to plastic turbo manifold and slide down and away.
9. Pull plastic turbo manifold down and off of OEM recirc valve. Some twisting and wiggling may be necessary to remove. **NOTE: Pictures below show this part removed from car to make the installation pictures clearer. This step is not necessary.**

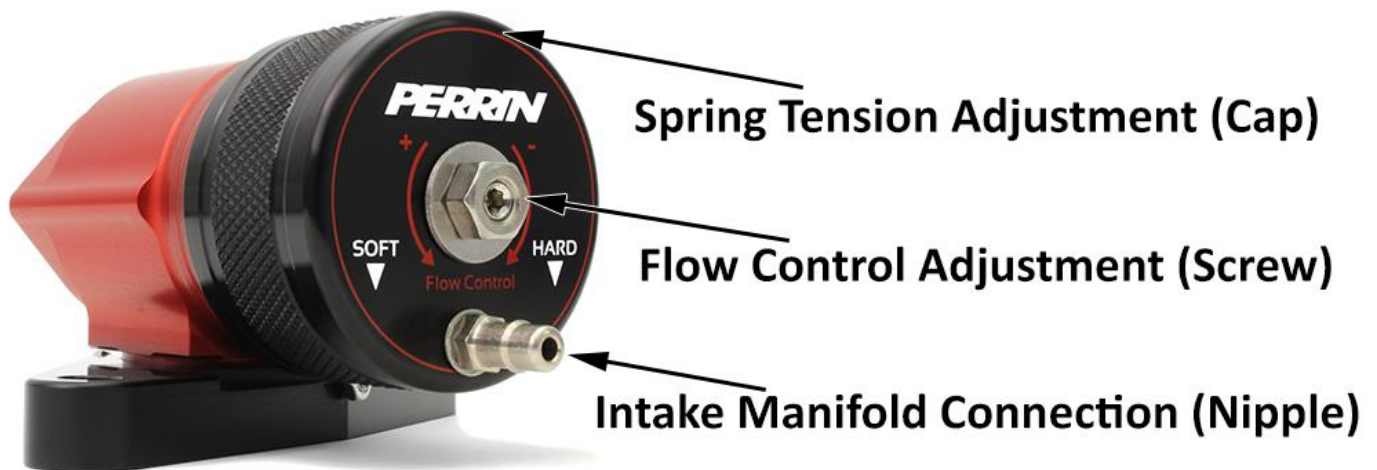


10. Loosen hose clamp securing recirc valve to plastic boost tube. Remove vacuum hose connection from recirc valve and remove OEM recirc valve from car. **NOTE: This part is very tight in boost tube and requires decent force along with wiggling and pulling to remove.**
11. Install supplied $\frac{1}{4}$ " hose onto $\frac{1}{4}$ " plastic connector. Install plastic connector into OEM vacuum hose (going to intake manifold vacuum) that was connected to recirc valve. Route hose to PERRIN BOV cap and install to fitting, securing with supplied zip tie.
12. Install PERRIN BOV into plastic connection on boost tube but leave clamp loose. This is a tight connection and will require force.

Connect 1/4" Connector Hose To Fitting



13. Install plastic turbo manifold onto PERRIN recirc valve. Some twisting and pinching of hose clamp will be necessary to slide it up completely onto nipple.
14. Reinstall (2) 10mm bolts securing plastic manifold to turbo. Make sure and line up plastic hosing, recirc valve, and turbo as best as possible ensure bolts do not get cross threaded in to turbo housing. Tighten bolts to 8ft-lbs.
15. Tighten hose clamp securing recirc valve to boost tube, and readjust pinch clamp to secure recirc valve to plastic manifold.
16. Reinstall (3) hoses removed from plastic manifold in step 6.
17. Resinstall rubber intake hose and secure with OEM clamp.
18. Start car and check for leaks. If car runs erratically, check for leaks around blow off valve tube connections or the plastic manifold around the turbo inlet. If these are not sealed, a vacuum leak will occur causing car to run poorly.
19. If car runs normally, continue with reinstalling skid plate and plastic splash guard that was removed earlier.
20. BOV is factory set, and no adjustment is necessary.

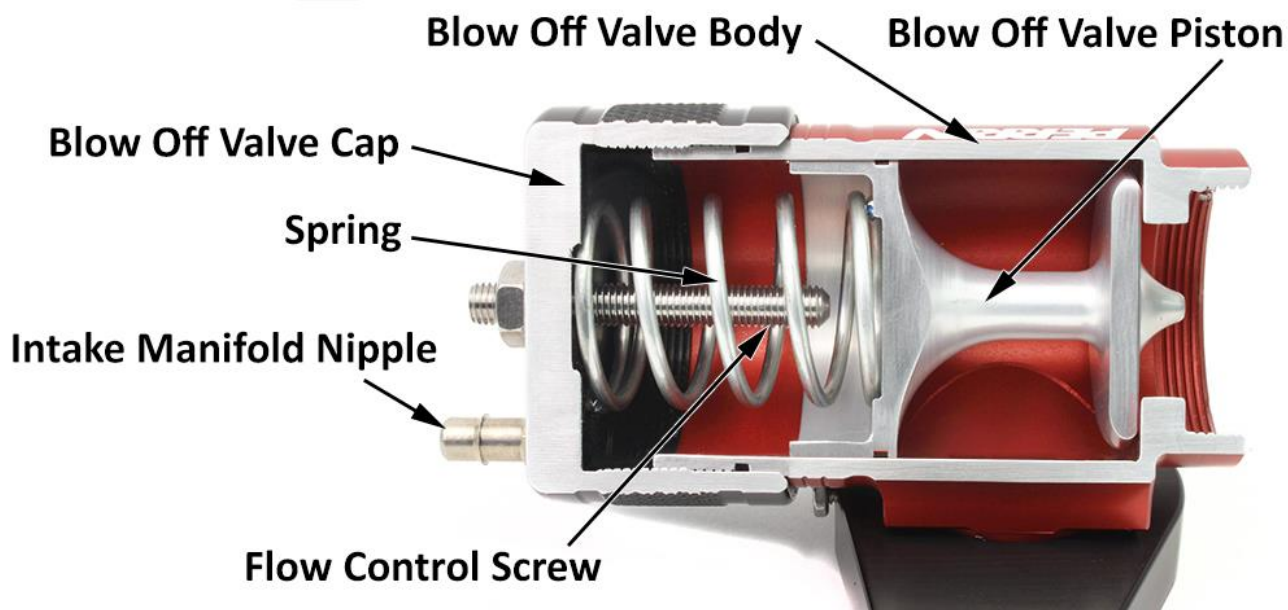


Tuning Instructions:

We preset each BOV to work on 95% of the applications and no adjustment is necessary. On cars with significantly higher boost levels, you may want to make the BOV flow more when venting. In these situations, simply adjusting the flow control screw counter clock-wise is all that is needed.

If you desire to gain a little more response between shifts, stiffening up the spring by screwing down the cap is necessary. As you screw the cap down you need to adjust the flow control screw to ensure the piston opens enough and flows the desired amount. Keep in mind that as you stiffen the spring, it keeps more boost in the tubes between shifts and can potentially lead to compressor surge. For instance, if you are running 10psi of boost, setting the spring too stiff may cause compressor surge which will damage your turbo over time. But that same setting will be fine for cars running 25psi or more.

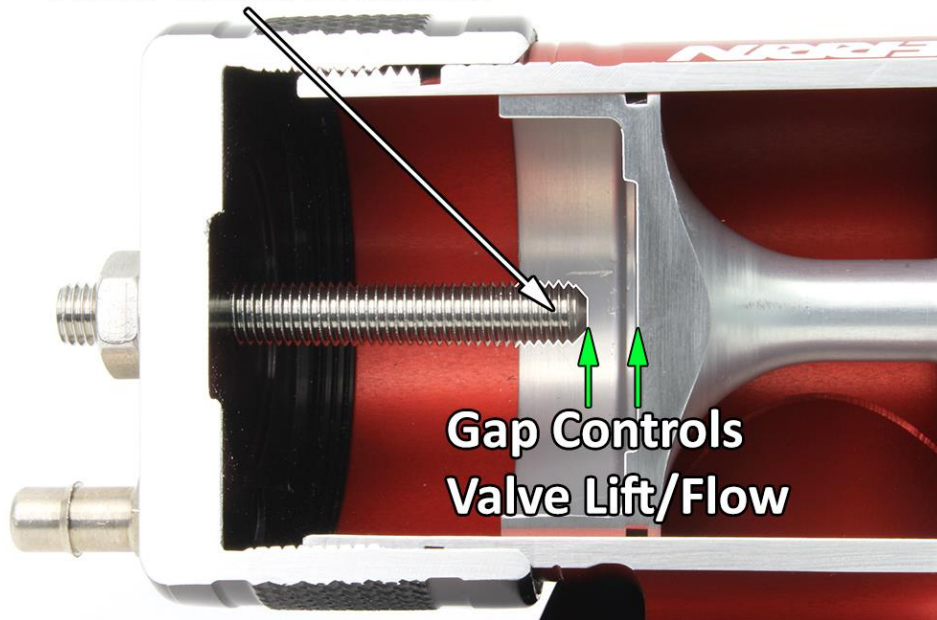
One last note: The blow off valve will hold unlimited boost even at the lightest setting. So adjustment is necessary to hold more boost with ultra-high boost applications.



Adjusting Spring Tension

- Adjusting the spring tension on the PERRIN blow off valve doesn't adjust the amount of boost it holds. Because of our unique design, no spring is needed to hold boost. The spring is used to adjust how quickly the blow off valve vents boost when backing off the throttle.
- Adjusting spring tension harder/tighter will make the blow off valve vent slower/later when backing off the throttle. Having this too tight can cause compressor surge under certain conditions (this is the fluttering or "cha-cha-cha" sound sometimes heard). A very slight amount of compressor surge is ok, but extreme amounts for prolonged periods of time can damage your turbo.
- Adjusting spring tension softer/looser will make the blow off valve vent quicker/sooner when backing off the throttle. Having this set loose will cause boost to be vented early while backing off the throttle, and in turn will reduce compressor surge. It is always best to error on the looser side than tighter.
- Use grooves on body below cap to indicate spring tension. The lightest spring tension is with 4 grooves showing and the tightest is with no grooves showing (where cap can't be adjusted any further).
- When adjusting spring tension, keep in mind that this affects the flow of the blow off valve due to the flow control screw moving up and down with the cap. When adjusting spring tension, it's best to back the flow control screw all the way out, then readjust flow control screw after spring tension is set. Follow directions below to adjust flow control screw.

Flow Control Screw



Adjusting Flow Control Screw

- Using diagram, locate the flow control screw. Adjusting this screw limits the amount the piston can open between shifts, which determines how much air will be vented between shifts.
- Flow control should be adjusted only after spring tension is set or cap is screwed down to desired position. This is important because as the cap is screwed up and down, it changes the amount the piston opens.
- Adjusting flow control screw counter clockwise will make blow off valve vent more boost when it blows off. Venting too much boost can cause the car to feel like it has turbo lag as the turbo has to refill the boost tubes.
- Adjusting flow control screw clockwise will make blow off valve flow less when blow off valve vents. The benefit to this is to keep some of the pressurized air in the boost tubes, making the turbo do less work to re-fill boost tubes. This makes the car feel like it has less turbo lag between shifts. Take note that not venting enough boost can cause compressor surge which can eventually cause damage to the turbo.
- Once adjustment is set, make sure to lock nut down to piston.
- We find that .250"- .375" of valve lift works well for most applications.