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## **INSTALLATION INSTRUCTIONS – Godzilla Bypass Valve Kit (Part No. 10765)**

**READ THIS FIRST:** Read instructions completely before proceeding with installation. Remove the product from its carton and inspect for any obvious physical damage. All products are thoroughly inspected and carefully packaged prior to shipment from the factory. If any shipping damage is evident, contact your supplier and request that they process a claim with the shipper involved. Be sure to review the parts list to verify that you have all necessary components to proceed. If any components in the parts list are missing, contact your supplier. The design of the bypass valve kit assumes the user has the ability to weld the included aluminum (part of main ass'y) or steel weld flange (included in kit) to a pipe (or other component) between the turbocharger and engine. It is also assumed that the installer has a thorough knowledge of turbo/supercharged engine operation and feels comfortable working on the vehicle. If in doubt, contact Turbonetics' technical support staff at 805-581-0333, between the hours of 8:00AM and 5:00PM PST, Monday through Friday OR by email at [Info@turboneticsinc.com](mailto:Info@turboneticsinc.com)

**SUMMARY:** The Godzilla Bypass Valve is designed to protect your high performance turbocharger or centrifugal supercharger from damage or failure due to compressor discharge pressure spikes. Design features include:

- Large flow area provides increased protection from compressor surge.
- V-band mounting flange provides flexible discharge orientation while preventing leaks.
- Low profile design accommodates installation where space is limited.
- Pull-type valve for low & high boost applications.
- Vent to atmosphere or re-circulate.

**OPERATION:** During deceleration (or between shifts) of a turbo/supercharged engine, the sudden closing of the throttle plate blocks airflow to the engine, causing a severe pressure spike, and possible turbo/supercharger damage. The bypass valve prevents this damage by sensing the intake manifold pressure (which experiences a high vacuum during deceleration) to open the valve and relieve the pressure spike. The factory-installed internal spring has been designed to keep the valve closed during normal engine operation, in most applications.

### **INSTALLATION:**

1. The Godzilla bypass valve can be installed in any position or orientation between the turbocharger compressor discharge and the throttle body per Figure 1. Considerations:
  - On engines fitted with draw-through mass air flow meters, the valve discharge air **MUST** be routed back to the intake between the mass air flow meter and turbocharger compressor. Otherwise, the meter will send an excess air flow signal to the ECU, which will result in an extra rich fuel signal to the injectors. The typical symptom is a rough idling or stalling engine. The included bypass valve discharge connection is designed for use with a 2.0" I.D. flex hose & band-style clamp (customer supplied).
  - On engines equipped with speed/density engine management systems, or "blow-through" carbureted engines, the valve may discharge to atmosphere using the supplied optional discharge Horn, OR be routed back to the turbo intake using the previously mentioned 2.0" OD hose connection.
  - Use of the Godzilla bypass valve for "draw-through" carbureted engines is not recommended.
2. Based on the above considerations, select a suitable location and mark the location accordingly. Remove the component (from your engine bay) and clean the area where the mounting flange is to be located.
3. Weld the appropriate mounting flange (both aluminum & steel are supplied in the kit) to the removed component. A stand-off tube may also be used between the weld flange and the removed component.
4. After welding, use the center hole of the mounting flange as a pilot to cut a 1 1/2" hole (hole saw works well) in the removed component. Remove all burrs and sharp edges. Using a straight edge, verify that the top

mounting flange surface is not distorted due to welding. If the flange is not flat, machine or otherwise flatten the mounting surface as required. The included o-ring will not seal if the flange isn't flat & smooth.

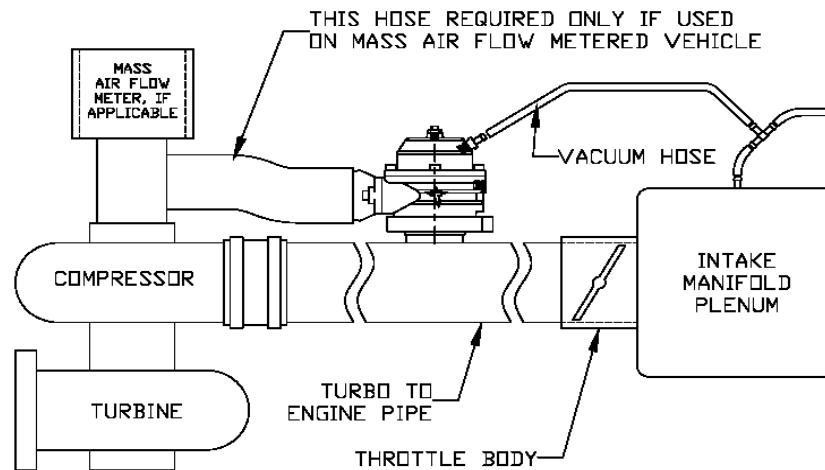


Figure 1

5. Clean interior of the removed component and re-install onto the vehicle.
6. Install the supplied O-ring (using silicone to hold it in place) in the groove near the top of the weld flange. Install the V-band flange component to the weld flange using the four supplied socket head screws & thread sealant.
7. Attach the bypass valve (main assembly) to the v-band flange using the larger of the supplied o-rings and the v-band clamp. Orient the discharge position and tighten down the V-band clamp (no more than necessary).
8. Attach the appropriate discharge to the valve using the supplied gasket and socket head screws.  
**Note:** On engines that have a mass air meter upstream of the compressor, the discharge must be plumbed back into the inlet tube after the mass air flow meter. (See Figure 1)
9. Refer to the hose schematic in Figure 1. Locate any convenient & available vacuum hose on the engine's intake manifold plenum (must be approx. 5/32" inside diameter), located downstream of the throttle body. Cut the engine's vacuum hose, splice in the supplied Tee fitting, and connect the supplied 5/32" Vacuum Hose from the 3rd leg of the Tee fitting to the fitting on the backside of the Valve. Care should be taken in routing the Vacuum Hose through the engine bay to prevent damage from any sharp edges or excessive temperatures. Cut the Vacuum Hose to length as needed, and secure the hose to the fittings with zip ties.
10. Standard installations do not have a reference line hooked up to the bottom vacuum port. This port must remain open to the atmosphere to allow the valve to operate (installation of a filter fitting is ok)  
**Note:** The boost sensing line (bottom port) may be connected to any convenient source between the turbocharger compressor discharge and throttle plate (location isn't critical). Since most of the valve motion is controlled by intake manifold vacuum, the valve will operate without this sensing line, but will have quicker response with it connected. We suggest using a small "filter" fitting, if not used for sensing.  
**IMPORTANT: Do not plug this hole, it needs to be able to breath in order for the valve to function.**
11. Refer to Note 1 and the hose schematic in Figure 1. In applications that require the Valve discharge air to be re-circulated, a 2.0" inside diameter flexible hose (to be sourced by the end-user) must be installed between the Valve (Hose Insert) discharge and the MAF-meter-pipe. Secure this hose with band-style hose clamps.

12. This bypass valve has been designed to work under normal driving conditions for most applications as delivered. Be sure to road test the vehicle to confirm proper operation. If, at any time, compressor surge is encountered, discontinue testing until problem is fixed.

- The opening point of the valve can be fine tuned with the adjustment screw on top of the actuator. To adjust, loosen the locknut on the setscrew and rotate the screw clockwise (into the actuator cover) to increase the initial spring pre-load and opening pressure. Re-tighten setscrew and road test to verify new setting. To decrease the spring pre-load, rotate the load screw counterclockwise (out of the actuator cover). Do not unthread so far that the screw comes out of the actuator cover. This hole needs to be properly sealed for the valve to operate.

**NOTE: When increasing the setting, adjust setscrew a max of 1-2 rotations at a time. If, at any time, compressor surge is encountered, discontinue testing until problem is fixed.**

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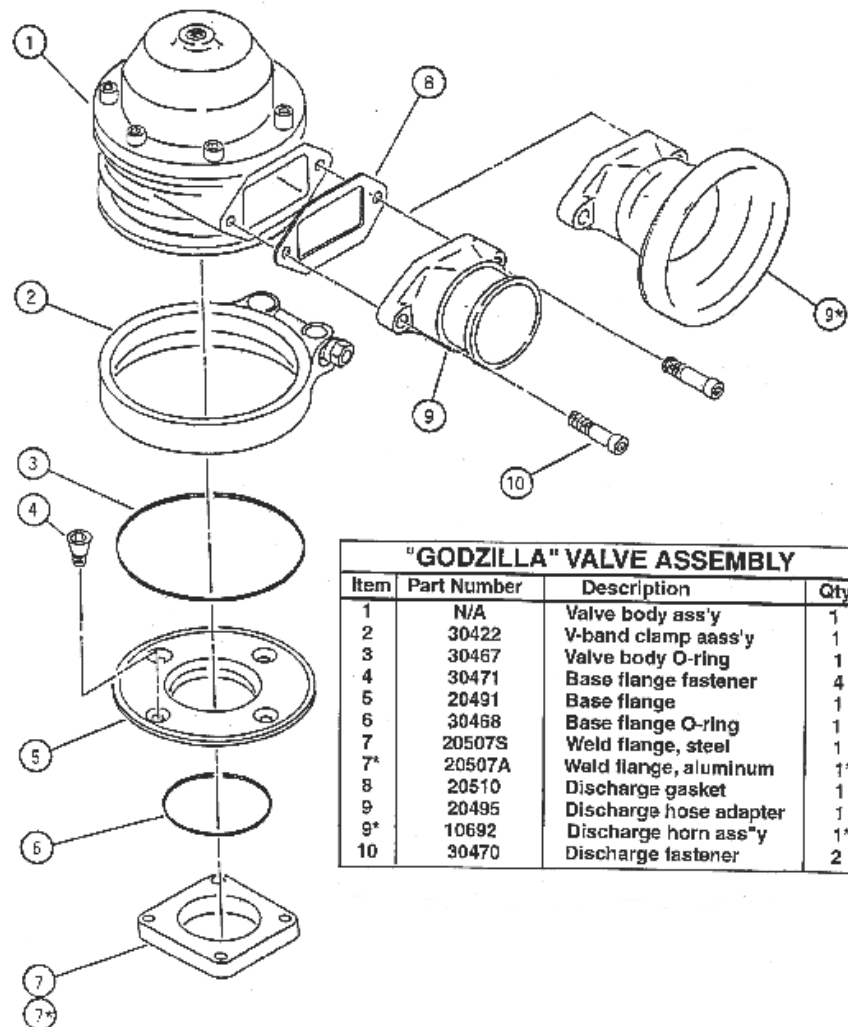


Figure 2