



INSTALLATION INSTRUCTIONS – *NewGen High Performance Wastegate*

IMPORTANT: Read instructions completely before proceeding with installation. Engine or turbocharger damage may occur if any wastegate is improperly applied or installed. Consult a knowledgeable turbo installer or Turbonetics tech support specialist with any questions about correct wastegate application or installation.

SUMMARY: The *NewGen Performance Wastegate* has been specifically designed to advance the “state of the art” in modern wastegate design. Properly applied and installed, it can reliably control turbocharger boost pressure in high-performance single turbo applications up to 1400 horsepower. The *NewGen* features a revolutionary swing valve design that guarantees the highest flow capacity in a given size of any similar product ever offered to the performance aftermarket. This unique design incorporates an efficient exhaust path with minimum flow restriction as opposed to the conventional poppet valve design. Features include a polished actuator section, an investment cast stainless steel body, a 2” diameter Inconel valve, a flourosilicone diaphragm, and zero-leakage V-band style connections.

OPERATION: The *NewGen Performance Wastegate* controls turbocharger boost by bypassing the turbine inlet gas flow in response to the preset actuator spring load or external control signal. The actuator section is fitted with sensing ports on both sides of the diaphragm, allowing precise control of valve motion, and the use of any external variable boost control device, pneumatic or electronic. A choice of actuator springs is included, to suit specific application requirements.

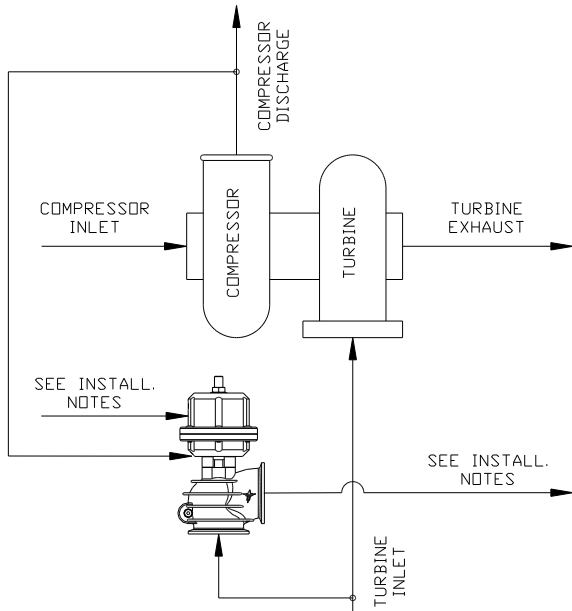


Figure 1:

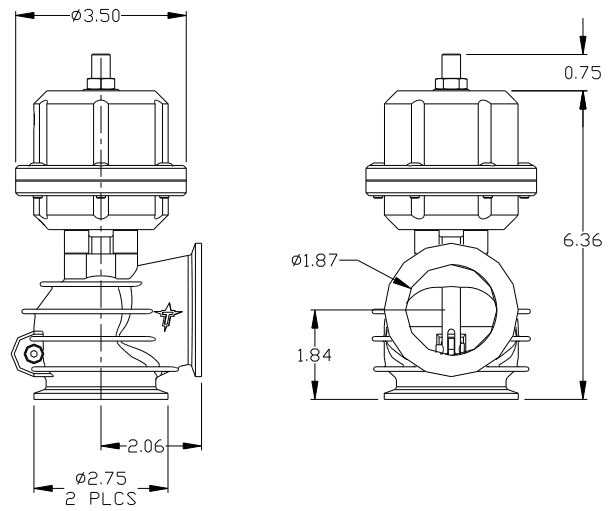


Figure 2:

INSTALLATION:

1. Remove wastegate from carton and inspect for any obvious physical damage. All wastegates are thoroughly inspected prior to your shipment. If any shipping damage is evident, return the unit to your supplier and request that he process a claim with the shipper involved. Shipment damage is not a Turbonetics responsibility. Do not return shipping-damaged units to Turbonetics, as they will be refused.
2. The **NewGen Performance Wastegate** may be installed anywhere between the engine exhaust and the turbine inlet of the turbocharger (refer to Figure 1), preferably near the header collector. The **NewGen** may be mounted in any orientation that is convenient, but care should be taken to insure that the actuator section is NOT exposed to extreme heat (if selected location places the actuator section close to a severe heat source, the use of a heat shield is recommended). Determine the routing of the **NewGen** exhaust so that it either exits away to the side or rear of the vehicle, or reconnects with the turbine exhaust discharge. NOTE: Federal and state laws require that all vehicle exhaust must exit away from the passenger compartment. The exhaust must be connected to the vehicle exhaust system or routed to the outside of the vehicle away from passenger compartment.

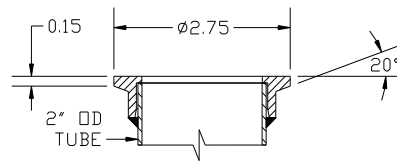


Figure 3

3. The **NewGen** features V-band style inlet and discharge connections. The V-band style connections allow it to be rotated 360 degrees to suit individual installation requirements. Mating flanges and clamps are supplied in the kit, and were designed to be welded to 2" OD tubing per Figure 3 (stainless or mild steel; 14-16 gauge). Be sure all mating surfaces are flat and free of irregularities. **NOTE:** A variety of mating flanges, fittings and other accessories are available from your nearest Turbonetics distributor (see common accessories list on last page).
4. Once the mounting and discharge routing provisions have been determined and fabricated, install the **NewGen Performance Wastegate**, utilizing the supplied V-band clamps (no gaskets required). Maximum recommended torque: 50 in-lbs.
5. Refer to the sensing line schematic shown in Figure 1. A minimum sensing line size of 1/8" ID is recommended for proper response. **NewGen** sensing line ports are 1/8" FPT. Use Teflon tape on all fitting pipe threads. Sensing line material should be suitable for automotive under-hood environment, and compatible with gasoline vapor. Care should be taken in routing sensing lines to preclude damage from any sharp edges or excessive temperatures.
 - **Stand-alone Installation:** If **NewGen** is to be installed as a conventional wastegate, the boost sensing line (bottom port) may be connected to any convenient manifold pressure source (suggested connection location is on the intake manifold plenum; runner locations may cause pulsing which may affect control stability). The top port may be left vented or connected to the turbocharger compressor inlet (location isn't critical).
 - **Variable boost control installation:** If **NewGen** is to be used in conjunction with a variable boost control device, follow the manufacturer's instructions relative to connections and routing. As in the conventional wastegate installation, it is strongly recommended that the boost sensing line be connected directly to the intake manifold plenum (do NOT tee into this line for any other function).

6. The **NewGen Performance Wastegate** has been factory calibrated to control boost within 1psi of the “dash number” decal affixed to the actuator cover (the number refers to the factory installed spring; 5, 8, 11 or 15). Using a suitable manifold pressure gauge, road test the vehicle to ascertain proper operation. If boost levels exceed specified limits during road testing, recheck all sensing line connections for proper location and leaks. Re-test to verify. **CAUTION:** If detonation occurs, discontinue testing until source of detonation has been located and resolved. Do NOT operate vehicle in detonation, as severe engine damage may result. Any damage incurred as a result of detonation is a customer responsibility.

BOOST ADJUSTMENT: The **NewGen Performance Wastegate** is fitted with a preload adjustment screw on top of the actuator. To adjust the preload of the installed spring (and therefore the opening pressure of the wastegate), you can do one of the following:

- To decrease spring load, remove the top actuator cover by removing the 6 screws (take caution, as the installed spring will be loaded), and install a smaller spring. Re-assemble and road test to verify new setting.
- To increase spring load by a small amount, loosen the locknut and rotate the load screw clockwise (into the actuator cover). Re-tighten locknut and road test to verify new setting.
- To increase spring load by a larger amount, remove the top actuator cover by removing the 6 screws (take caution, as the installed spring will be loaded), and install a larger spring. Re-assemble and road test to verify new setting. If adjustment isn't enough, “fine tune” the setting by adjusting the load screw.

CAUTION: When increasing the setting, adjust load screw 1-2 turns at a time, to avoid excessive boost and possible detonation (for reference, a 1/4" load screw adjustment corresponds to approximately a 3-4psi change in boost setting).

7. Under normal use, the **NewGen Performance Wastegate** requires no maintenance. As a preventative maintenance measure, it is suggested that the vehicle be “exercised” (operated at controlled boost levels) as often as possible to avoid any sticking concerns generated by potential build-up of deposits on the valve or the shaft mechanism. It is also a good idea to periodically check all hose & flange connections for leaks, especially after install.

KIT CONTENTS (part number in bold):

The following items are included in the **NewGen Wastegate** kit – **10733**

- (1) Main wastegate assembly (one of the springs will be installed)
- (1) 5 PSI spring (yellow) – **30693-5**
- (1) 8 PSI spring (orange) – **30693-8**
- (1) 11 PSI spring (red) – **30693-11**
- (1) 15 PSI spring (pink) – **30693-15**
- (2) V-band flanges – **20650**
- (2) V-band clamps – **30643**
- (2) Hose fittings, straight, 1/8 NPT x 1/4 – **30737**
- (2) Hose fittings, elbow, 1/8 NPT x 1/4 – **30738**
- (6ft) Silicone vacuum hose – **30542**
- (1) Instruction sheet – **60106**

The following items are common accessories used with the **NewGen Wastegate:**

- Adapter flange, HKS to Newgen – **20613**
- Adapter flange, Deltagate to Newgen – **20614**
- Adapter flange, Racegate to Newgen – **20615**
- Hose fitting, 3-way tee - **30308**

