



## **GARRETT VENT | EXTERNAL WASTEGATES**

**High flowing external wastegates for turbocharged racing and performance engines**



**G**arrett Vent | External Wastegates regulate turbocharger shaft speed by venting exhaust gas around the turbine stage of the turbocharger. CFD optimized design maximizes flow and delivers optimum boost control. Advanced thermal optimization increases durability of the diaphragm. The cap design makes spring changes and serviceability of the entire GVW lineup easier and more reliable to perform.

**Garrett**  
ADVANCING MOTION



# GARRETT VENT | EXTERNAL WASTEGATES

External wastegates for turbocharged racing and performance engines

Garrett Vent | External wastegates are created by the engineers that designed G-Series and GTX Gen II turbochargers. Available in three sizes: 40mm | 45mm | 50mm and four color combinations: Red | Blue | Black | Silver. The valve housing is cast from high temp stainless steel and rated for exhaust temperatures up to 1050° C. CFD optimized for maximum flow and thermal efficiency. Our Nomex reinforced elastomer diaphragm provides exceptional durability and fatigue resistance.

GVW wastegates are set to 1 Bar | 14.5 PSI of base pressure and can be configured from 0.2 Bar | 2.9 PSI - 1.7 Bar | 24.7 PSI (considering 1:1 backpressure). The actuator design allows for multiple air/liquid fitting orientations. All fasteners, springs, fittings, V-bands, clamps, and flanges included. For pricing and availability please contact an authorized distributor.

Model	Base Pressure	Red	Blue	Black	Silver
GVW-40	1 Bar   14.5 PSI	908827-0001	908827-0002	908827-0003	908827-0004
GVW-45	1 Bar   14.5 PSI	908828-0001	908828-0002	908828-0003	908828-0004
GVW-50	1 Bar   14.5 PSI	908829-0001	908829-0002	908829-0003	908829-0004

## Features:

- CFD tested for maximum flow and thermal efficiency
- Optimized actuation stability and temperature resistance for superior durability
- Replaceable valve and bushing components to increase service life
- Robust design for easy diaphragm replacement
- Liquid-cooled actuator ports for use on severe applications (up to 52% reduction in body temp)
- Anodized aluminum actuator cover



Mechanical Data	GVW-40	GVW-45	GVW-50
Valve Diameter	40mm	45mm	50mm
Valve Mass	1.27kg   45oz	1.47kg   52oz	1.56kg   55oz
Max Spring Base Pressure	1.7 bar   25 psi (1:1 backpressure ratio)		
Minimum Spring Base Pressure	0.2 bar   3 psi (1:1 backpressure ratio)		
Port Fitting: Air	M10x1.0 to hose barb (Hose ID 6mm   .25in)		
Port Fitting: Liquid	M8x1.0 to AN-3		

Material Data	GVW-40   GVW-45   GVW-50
Valve Housing	High temp stainless steel rated up to 1050°C
Diaphragm	High temp Nomex reinforced elastomer
Actuator Cover	Fully-machined anodized 6061 aluminum
Valve Guide/Bushing	Nitronic 60
Valve	High temp stainless steel with plated stem
V-Band	CNC machined 304 stainless steel
Flanges	Fully-machined 304 stainless steel
Springs	17/7 PH stainless steel

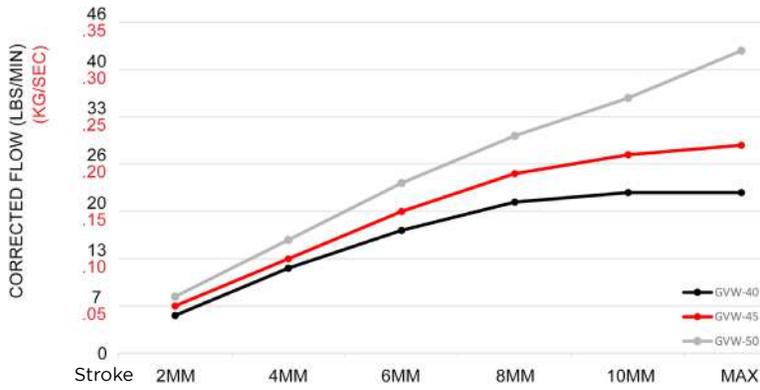
Thermal Data	GVW-40   GVW-45   GVW-50
Max Thermal Stress (Non-Cooled)	270°C actuator body temp during thermal cycle test
Max Thermal Stress (Liquid-Cooled)	130°C actuator body temp during thermal cycle test
Max Exhaust Temp: Peak	Up to 1050°C



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## Flow Data

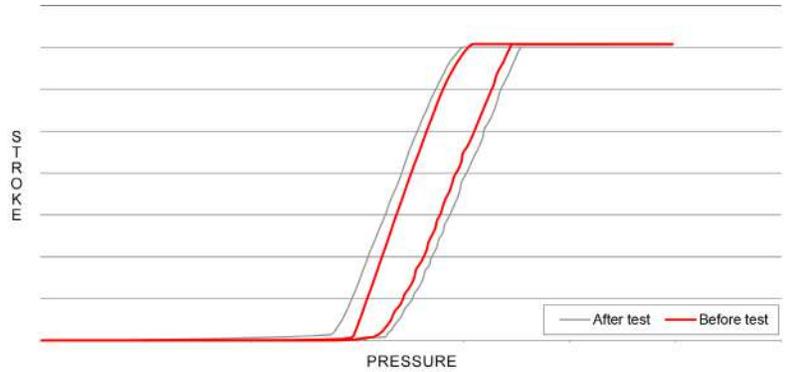


## Actuation Durability Test Data

When researching and testing common shortfalls of wastegates, we observed how heat cycling and normal wear can rapidly change their actuation characteristics. Garrett engineers created GVW as a high flowing product with low degradation in performance over its lifespan.

Actuation data (opening and closing) in the chart was measured before and after extreme testing conditions. Results show the heat cycled GVW product maintains linear control of the wastegate as compared to the new product.

Precise actuation of the GVW provides accurate calibration settings and performance throughout the lifespan of the product. Accurate wastegates, allow for optimum performance of the turbocharger.



## Spring Pressure Chart

	BASE PRESSURE															
	PSI 3	4	6	7	9	10	12	13	14.5	16	17	19	20	22	23	25
	Bar 0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7
<b>GVW-40</b>																
Red	x						x	x		x						
Blue		x							x		x			x	x	x
Green			x				x	x				x			x	
White				x				x					x	x		x
Brown					x				x					x		
Purple									x	x	x	x			x	x
<b>GVW-45   GVW-50</b>																
Blue	x					x	x		x	x				x	x	
Green		x						x			x	x		x		
White			x			x		x	x				x		x	
Brown				x			x	x	x	x	x					
Purple												x	x	x	x	
Black										x	x	x	x	x	x	x

Spring pressures are calculated based on a 1:1 boost/backpressure ratio. Actual intake manifold (boost) pressure can vary

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## Ancillary Part Chart | Tightening Torque Specs

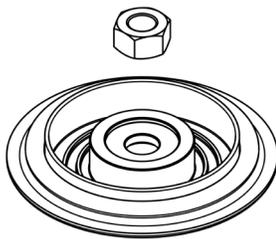


Description	Tightening Torque Nm   ft-lb	GVW-40	GVW-45	GVW-50
Kit: Air Fitting (Banjo Fitting, Bolt, 2 Crush Washers)	15   11		910477-0001	
Kit: Diaphragm (Diaphragm Assy, Valve Stem Nut)	10   7	910476-0001	910476-0002	
Kit: Valve/Bushing (Valve,Bushing,Seal Washer,O-Ring,Valve Stem Nut,Seat)	10   7	910478-0001	910478-0002	910478-0003
Kit: V-Band Inlet (V-Band, Bolt, Locknut)	15   11	910475-0001	910475-0003	910475-0004
Kit: V-Band Outlet (V-Band, Bolt, Locknut)	15   11	910475-0002	910475-0001	910475-0003
Bolt, Actuator Body	5   4			
Bolt, Actuator Cap	2.5   2.0		894537-0001	
Bolt, V-band	NA		894540-0006	
Bolt, Banjo Fitting	15   11			
Bushing	30   22			
Fitting, Water 8mm	10   7		895520-0001	
Fitting, Plug Air 10mm	15   11		895519-0001	
Flange, Inlet Weld	NA	894649-0003	894649-0001	894649-0007
Flange, Outlet Weld	NA	894649-0004	894649-0002	894649-0008
Locknut, V-band	15   11		905694-0001	
Nut, Valve	10   7			
Nut, V-Band	15   11			
Seat, Valve	NA	894648-0002	894648-0001	894648-0004
Spring, Red (See Spring Chart For Spring Pressure)	NA	898344-0001		
Spring, Blue (See Spring Chart For Spring Pressure)	NA		898344-0002	
Spring, Green (See Spring Chart For Spring Pressure)	NA		898344-0003	
Spring, White (See Spring Chart For Spring Pressure)	NA		898344-0004	
Spring, Brown (See Spring Chart For Spring Pressure)	NA		898344-0005	
Spring, Purple (See Spring Chart For Spring Pressure)	NA		898344-0006	
Spring, Black (See Spring Chart For Spring Pressure)	NA		898344-0008	
Washer, Crush 8mm	NA		895518-0002	
Washer, Crush 10mm	NA		895518-0001	

### GVW Replacement Part Kits



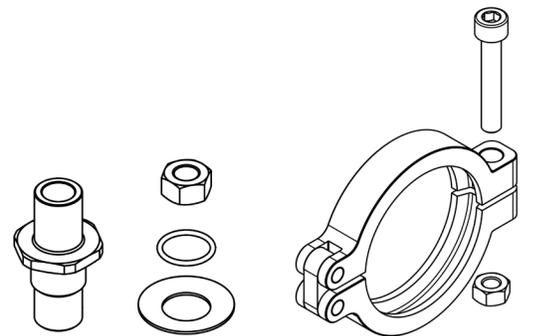
[Air Fitting Kit](#)



[Diaphragm Kit](#)



[Valve/Bushing Kit](#)



[V-Band Inlet | Outlet Kit](#)