

**TIAL**<sup>®</sup>  
**SPORT**



# wastegates

MV-S<sup>®</sup> watercooled MV-R<sup>®</sup> watercooled



## All TiAL<sup>®</sup> Wastegates Feature the Following:

High temperature alloys for the valves and lower housings, billet aluminum CNC machined actuator housings, Nitronic 60 valve guide and seat. The high temperature materials were selected for their unique combination of high corrosion, wear, and galling resistance properties. TiAL<sup>®</sup> Wastegates also utilize high temperature Nomex reinforced actuator diaphragms. TiAL<sup>®</sup> Wastegates are designed with optimized actuator-to-valve area ratio providing maximum control and wide dynamic flow capacity. The stainless steel actuator spring gives consistent pressure at elevated temperatures. TiAL<sup>®</sup> Wastegate spring base pressure ranges from 2.17psig to 25psig.

## All MV series wastegates now feature water cooling ports standard



### MV-S<sup>®</sup> Watercooled

This 38mm unit is much more compact than its predecessor - standing only 3.7" in height. The V-Band flanges make for a pain free install and the 3 lower & 2 upper air ports make connecting pressure sources and boost controllers easy! Flanges and clamps are included as well as plugs

Each MV-S Package includes:  
 MV-S Unit  
 Inlet and outlet clamps and flanges  
 Two air fittings  
 Plugs for unused ports  
 Two -4AN water fittings

### MV-R<sup>®</sup> Watercooled

This 44mm wastegate is more compact than any current 44 or 46mm wastegate on the market. You get two top air ports, and three bottom air ports for easy install. This unit is a direct bolt on for our 44mm v-band flange.

Each MV-R package includes:  
 MV-R unit  
 Inlet and outlet clamps and flanges  
 Two air fittings  
 Plugs for the unused ports  
 Two -4AN water fittings



L:3.77" W:3.77" H:4.80"

F38<sup>®</sup> Package Includes:  
 F38<sup>®</sup> Assembly  
 F38<sup>®</sup> Valve Seat  
 2 F38<sup>®</sup> gaskets  
 2 TiAL<sup>®</sup> Air Fittings  
 2 Mounting Bolts  
 4 Flex Washers



TiAL<sup>®</sup> MV-S<sup>®</sup> MV-R<sup>®</sup> F38<sup>®</sup> F41<sup>®</sup> F46<sup>®</sup> & V60<sup>®</sup> Wastegate Assemblies set a new level of wastegate design precedence. TiAL<sup>®</sup> wastegate assemblies were created as a result of true motorsports development and testing. Second to none! This advanced engineered product has become the primary choice among many "factory works" Le Mans, Formula, Touring, GT and Pro drag racing teams, as well as many performance street cars all over the world!

L:4.60" W:3.97" H:5.85"

V60<sup>®</sup> Package Includes:  
 V60<sup>®</sup> Assembly  
 V60<sup>®</sup> Valve Seat  
 Inlet V-Band Clamp and Flange  
 Outlet V-Band Clamp and Flange  
 2 TiAL<sup>®</sup> Air Fittings



L:4.00" W:3.77" H:4.92"

F41<sup>®</sup> package Includes:  
 F41<sup>®</sup> Assembly  
 F41<sup>®</sup> Valve Seat  
 8 Stainless Steel Cap Screws  
 8 Stainless Steel Flex Washers  
 2 TiAL<sup>®</sup> Air Fittings



L:3.97" W:3.97" H:5.70"

F46<sup>®</sup> Package Includes:  
 F46<sup>®</sup> Assembly  
 F46<sup>®</sup> Valve Seat  
 8 Stainless Steel Bolts  
 2 TiAL<sup>®</sup> Air Fittings  
 2 Gaskets

**NOTE:** Casting is available with machined sides for 911 Turbo fitment



# MV-S

Watercooled

# MV-R

Watercooled



Removable  
-4 AN Water fittings

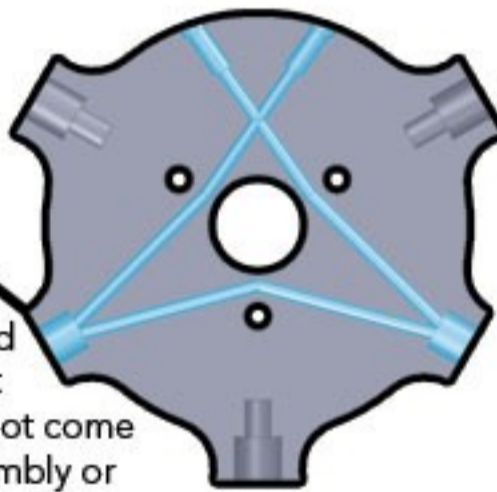


New water cooling ports now come standard on all MV series wastegates

Water cooling is ***not required*** for a typical street car application

Water cooling is required if:

- You road race the car
- You have low/no airflow in your engine bay
- Your downpipe/exhaust manifold come close to the top hat of the wastegate
- Rotary applications are not required to run water, but highly recommended



Water ports can be sourced from the turbo water lines - a simple T junction can be used

The wastegate uses very little coolant which will have virtually no affect on the rest of the cooling system

Water enters one port, flows around the base and out the opposite port thru drilled paths, the water does not come in contact with the spring cup assembly or anything else inside the top

Using the water cooling ports when they are not required will:  
Prolong the life of the wastegate  
Prevent the top from changing color



# blow off valve



Choosing the correct Q/QR Spring:  
If your engine idle vacuum is between:

- 20 and -21 In/Hg use the -11psi spring
- 16 and -19 In/Hg use the -10psi spring
- 12 and -15 In/Hg use the -8psi spring
- 8 and -11 In/Hg use -6psi spring

For supercharged applications we offer a -3psi spring

The Q and the QR BOV's from TiAL Sport. Introduced in 1999, the VF50 BOV set a new standard for blow off valves and was unrivaled in every aspect. TiAL's second generation BOV named Q outflows the VF50 by 60% and the nearest competitor by 40%. The QR, TiAL's recirculating BOV, was designed on the principal of keeping maximum recirculation, by allowing the user to have vent to atmosphere flow in a recirculating valve.

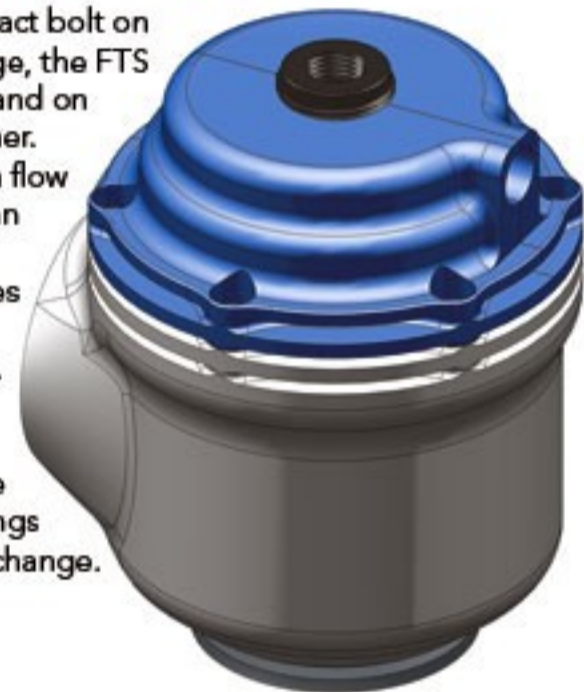
With a TiAL BOV in place, you can improve the long term durability and reliability of your turbocharger – It will prevent the turbo compressor from taking a compressed air beating when the throttle closes.

The integration of a TiAL Sport Q or QR will allow quicker boost response during gearshifts or off throttle conditions. During these instances, the turbocharger is still operating in an active compression mode. Activation of the Q or QR will eliminate the compressor back pressure and allow for quicker boost response. In addition, a TiAL BOV will enhance the turbocharger's overall lifespan by alleviating detrimental compressor surge thrust loads during closed throttle or high vacuum conditions.

A TiAL Sport Blow Off Valve is a vital component to any turbocharged vehicle. The Q and QR incorporate uniquely designed features such as a light-weight CNC machined billet aluminum valve and actuator housing, high temperature Normex diaphragm and a universal V-band connection.

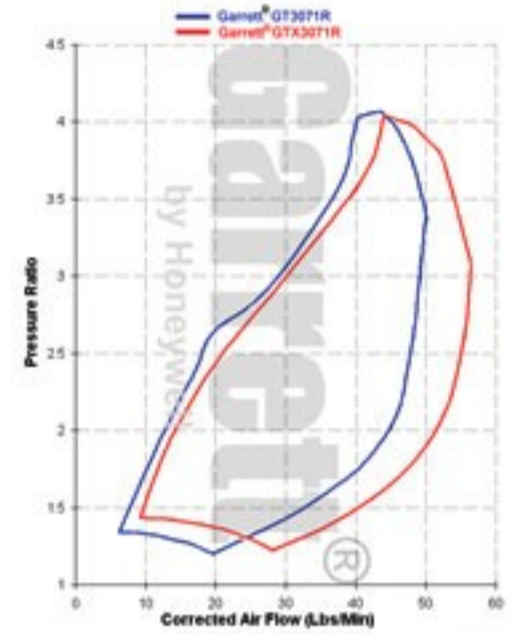
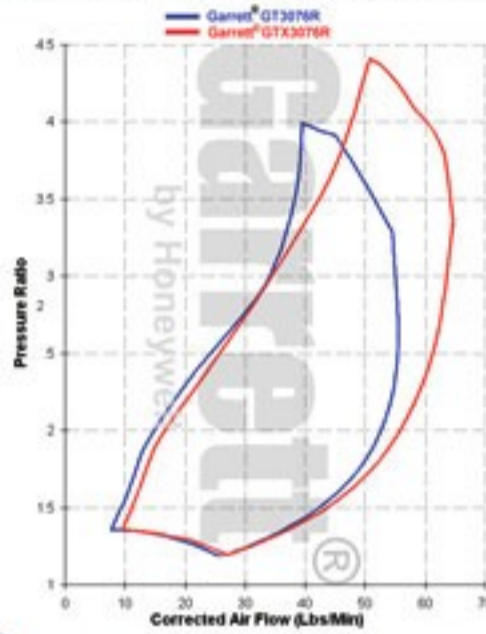
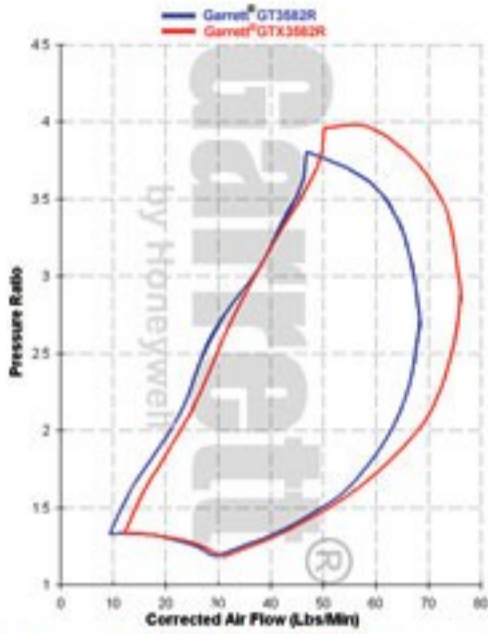
## NEW FOR 2011: FTS BOV

The FTS BOV is TiAL's first ever compact bolt on BOV/BPV. Utilizing a Vband inlet flange, the FTS will connect to a flange that has a Vband on one side and an OE flange on the other. Other features include a high lift/high flow valve design which provides more than 70% additional flow over other bolt on types. A different set of outlet sizes will also be available - standard 1" Bosch type, 1.34" Mitsubishi type etc. More details about the unit will be released in the first quarter of 2011. Be sure to check the website for more details! Note these are early renderings and the look of the unit is subject to change.



For demonstration videos about the TiAL BOV's go to [www.tialsport.com/video](http://www.tialsport.com/video)

## Mid-Frame Garrett GTX-R Series vs. GT counterpart



Garrett is recognized as the leader in turbocharger technology. TiAL Sport sells and modifies Garrett's complete line of high performance turbos. TiAL Sport branded turbochargers are built around true Garrett components with custom machined Garrett end housings or TiAL Sport designed and manufactured end housings for application specific builds. See our website [www.TialSport.com](http://www.TialSport.com) for a complete list of available turbochargers and TiAL offerings.

## Garrett Mid-Frame GTX-R Series Turbochargers

New for 2011

Over 10% additional airflow compared to GT series.

Can efficiently operate at over 10% higher pressure ratios than GT series turbos



Forged fully machined billet compressor wheel

Direct drop in for GT series turbos  
Example: GTX3582R will bolt in place of a GT3582R

Large-frame options:

GTX4294R  
GTX4202R  
GTX4508R

Mid-frame options:

GTX3071R  
GTX3076R  
GTX3582R



TiAL Cast Stainless Steel Internally Wastegated Turbine Housing

### TiAL Internally Wastegated Stainless Steel Turbine Hsg

Available in 2011 for GTX 28,30,35  
Vband in and out  
Wastegate gas divided from turbine  
Same center line as cast SS housings  
Two bolts for quick removal  
Different A/R's available  
No gaskets  
No leaks

### TiAL S605 B5 S4 Kit TiAL R770 B5 S4 Kit

Complete bolt in kit for the 2000-2002 Audi S4. Comes with all lines and accessories needed to bolt the kit to the car. capable of producing over 700hp. Uses Garrett GT ball bearing center sections\* and has been putting stock engine S4's in the low 11 second range in the quarter mile.

\*S605 kit is Journal Bearing



R770 2000-2002 S4 Turbo

GTX4202R w/Watercooled SS Turbine Housing



A28 Alpha Series 993

### TiAL Alpha Series

for Porsche 996 and 993  
Capable of 1000hp w/other upgrades  
No modifications to exhaust system  
Oil & water-cooled bearing system  
Garrett GT28/30 Based Turbocharger  
Boost threshold equal with stock  
Patented CNC actuator Bracket  
TiAL Bolt-on Turbine Housing  
Ball bearing

### TiAL Watercooled Turbine Housing

5-Axis Stainless Steel Jacket  
Designed for marine applications where constant throttle and high temps are present. Features seven threaded water ports for versatility. Currently available for Garrett GTX 42 and 45 series. These jackets are compatible with the TiAL stainless steel turbine housings only.



# sponsored vehicles



# accessories



Porsche 944 Billet Motor Mount



Porsche 930 Oil Tank

18mm GT Water fitting Kit



TIAL Keychains



Porsche Oil Feed Adapters



14mm GT Water Fitting Kit



Women's top



Women's Tank



T-Shirts



Hat



T-Bolt Clamps



V-Band Clamps



Gaskets



Lines/Fittings



Silicone Couplers



Garrett Turbo Speed Sensor Kit





GT55 Billet Stainless Steel Turbine Housing

TIAL<sup>®</sup> Sport USA takes pride in establishing its company's reputation by designing and producing the highest quality products for today's performance turbo market. The production of TIAL Sport's super alloy based F46<sup>®</sup> wastegate was the foundation of the company's ability to design, manufacture and deliver a high performance, high quality product at a competitive price. We are proud to bring you our USA made, high performance automotive products. Our goal is to design, engineer and manufacture the best possible products to the highest level of product integrity. At TIAL Sport, we believe there is no room for compromise. TIAL Sport is looking forward to meeting and exceeding your performance engine boosting system needs.

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