

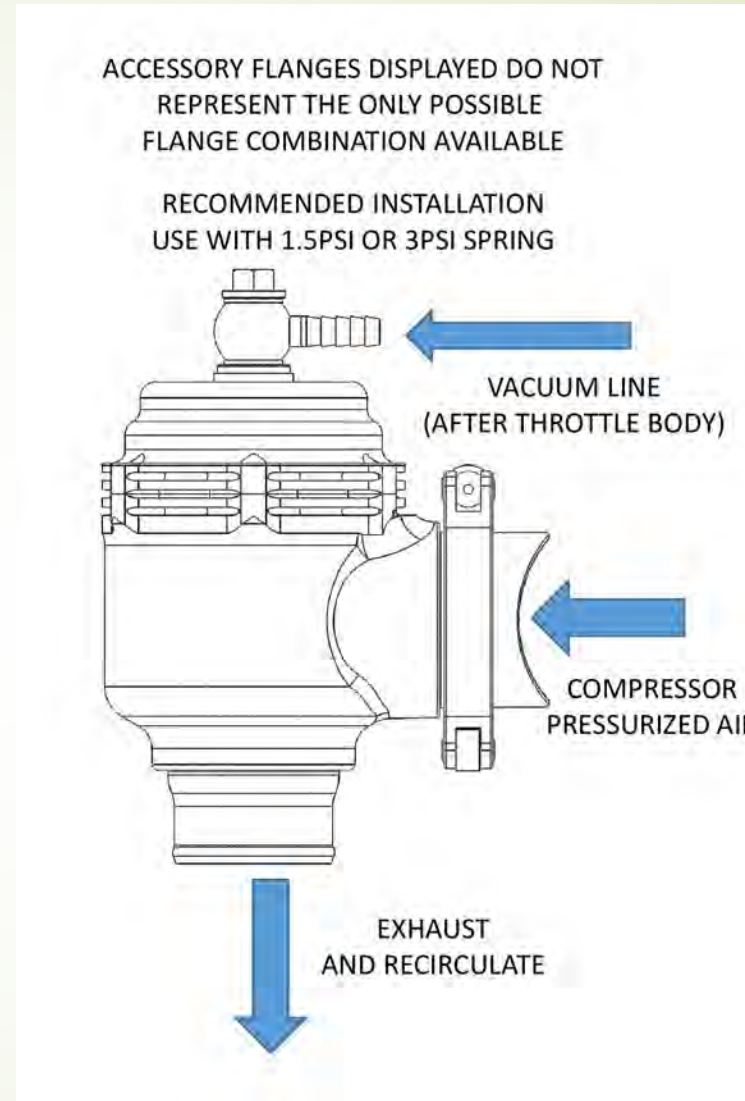
# TiALSport QRJ Data Sheet

Within this sheet you'll find the technical data needed to provide for a clean installation and any future service required for your new TiALSport QRJ Blow-off Valve.

For any further technical questions, please email [tech@tialsport.com](mailto:tech@tialsport.com)

# Configuration

- ▶ The QRJ works best when installed as noted in the diagram.
- ▶ The unique tapered piston, combined with a pressurized chamber, provide for linear response and high flow.
- ▶ When used in the recommended configuration, we suggest using either the -1.5 or -3.0psi spring.
- ▶ The QRJ can be used in the 'reverse' configuration, but the spring choice will typically need to be of a higher value.



# Spring Values

- The spring values represent the rate at which the BOV will just begin to open.
- To test a BOV, use a hand-type pump or regulated supply of vacuum, and as the rate approaches the spring value, the piston should then just begin to travel, and as that value is increased, continue to open.
- The BOV should hold vacuum for a few seconds only.
- The opening rate can be altered by simply changing springs.

<b>PART #</b>	<b>QRJ COLORS</b>	<b>PSI</b>	<b>in HG</b>
004835	PINK	-1.5	-3.1
001610	GREEN	-3	-6.1
004653	BLUE	-7	-14.2
004567	ORANGE	-8	-16.3
001611	BLACK	-9	-18.3
004654	RED	-11	-22.4
001612	WHITE	-12	-24.6

# QRJ FAQ

AKA: "The internet told me this; is that right?"

- ▶ **What spring is right for my (insert application here)? The internet says my application should 'always' use (insert spring value here)...**
- ▶ *The unique configuration and design of the QRJ provide for the use of a very low spring rating to provide a linear response characteristic. Since the unit's main body and piston are pressurized, rather than the piston face, we recommend using either a -1.5 or -3.0psi spring to provide the best possible response. But alternative springs are offered if customers prefer a less linear response.*
- ▶ **Why is my BOV open at idle? Won't that cause problems? The internet said it's not right....**
- ▶ *The definitive answer is that the only time that a BOV being open at idle will cause problems is if is being used on an application with mass air flow (MAF) sensor upstream of the turbocharger inlet. In such a case, we don't recommend using an atmospheric-discharge BOV, and instead, this should use a recirculating-type discharge. If the application doesn't use a MAF, or the MAF is downstream of the turbo outlet, the BOV can absolutely be open at idle and it will not cause any functional problem. When using a spring value lower than engine vacuum at idle, the BOV will be open, to some extent, and it's not a concern.*
- ▶ **Won't a BOV that's open at idle allow dirt/dust/water into the engine? The internet said so....**
- ▶ *The BOV discharge will always have a positive pressure value, even at idle, simply because the turbo will produce pressure greater than atmospheric levels. This typically prevents any intrusion of foreign material. But if there is a concern, and/or the application is subject to a dirty environment (off-road, etc.), then routing the discharge to the clean air inlet system will protect the unit completely.*
- ▶ **What about my supercharged application? What should I do there? The internet said it doesn't matter....**
- ▶ *Supercharged applications typically work best when a very low spring value is used, to ensure that the BOV is open at idle and under part/light throttle. This is necessary to reduce issues of drive-belt slippage, as well as to protect the throttle body from pressure at idle, and it tends to simplify tuning. For supercharged applications, we recommend using the -1.5psi spring, but if the opening rate is a bit too aggressive, a move to the -3 or -7psi spring can help. But no matter what, don't be tempted to use a spring that forces the BOV closed at idle with your supercharger.*
- ▶ **But what about the sound? All the videos on the internet have crazy sounds!**
- ▶ *The noise produced by the BOV, when discharging, can vary greatly due to engine dynamics, BOV placement, and there are as many opinions as there are sounds. The quicker the response, the softer the sound, and the more delayed the response, the sharper the sound. But, by and large, the QRJ, with the diffuser-type outlet, is the loudest configuration. Recirculating the discharge is the quietest configuration.*



# Exploded View and Parts List

- The QRJ is sold as BOV only, with air fittings. Connection flanges are sold separately.
- Multiple flange options are offered and are completely modular.
- All service parts listed are available as loose items and can be found at [tialsport-outlet.com](http://tialsport-outlet.com)

**QRJ BOV**

The diagram shows an exploded view of the QRJ BOV assembly. Key components are labeled: TOP, VALVE GUIDE, SPRING, SPRING CUP ASSEMBLY, BOTTOM, TOP BOLT (6X), DIFFUSER OUTLET, 1.00" TUBE, 29mm TUBE, 34mm TUBE, 1.50" TUBE, Q & QR CONVERSION, and DIFFUSER OUTLET.

BANJO SET	
AIR BOLT	
WASHER (2X)	
BANJO	

V-BAND SET	
FLANGE	
O-RING	
CLAMP	
NUT	
WELD FLANGE (AL, SS)	

PART	PART NUMBER
TOP BOLT	001851
BANJO SET	000545
SPRING CUP ASSEMBLY	004719
V-BAND SET (ALUMINUM)	004809
V-BAND SET (STAINLESS)	004811
Q & QR CONVERSION	004781
1.00" TUBE	004812
1.50" TUBE	004492
29mm TUBE	004794
34mm TUBE	004881
DIFFUSER OUTLET	004806