

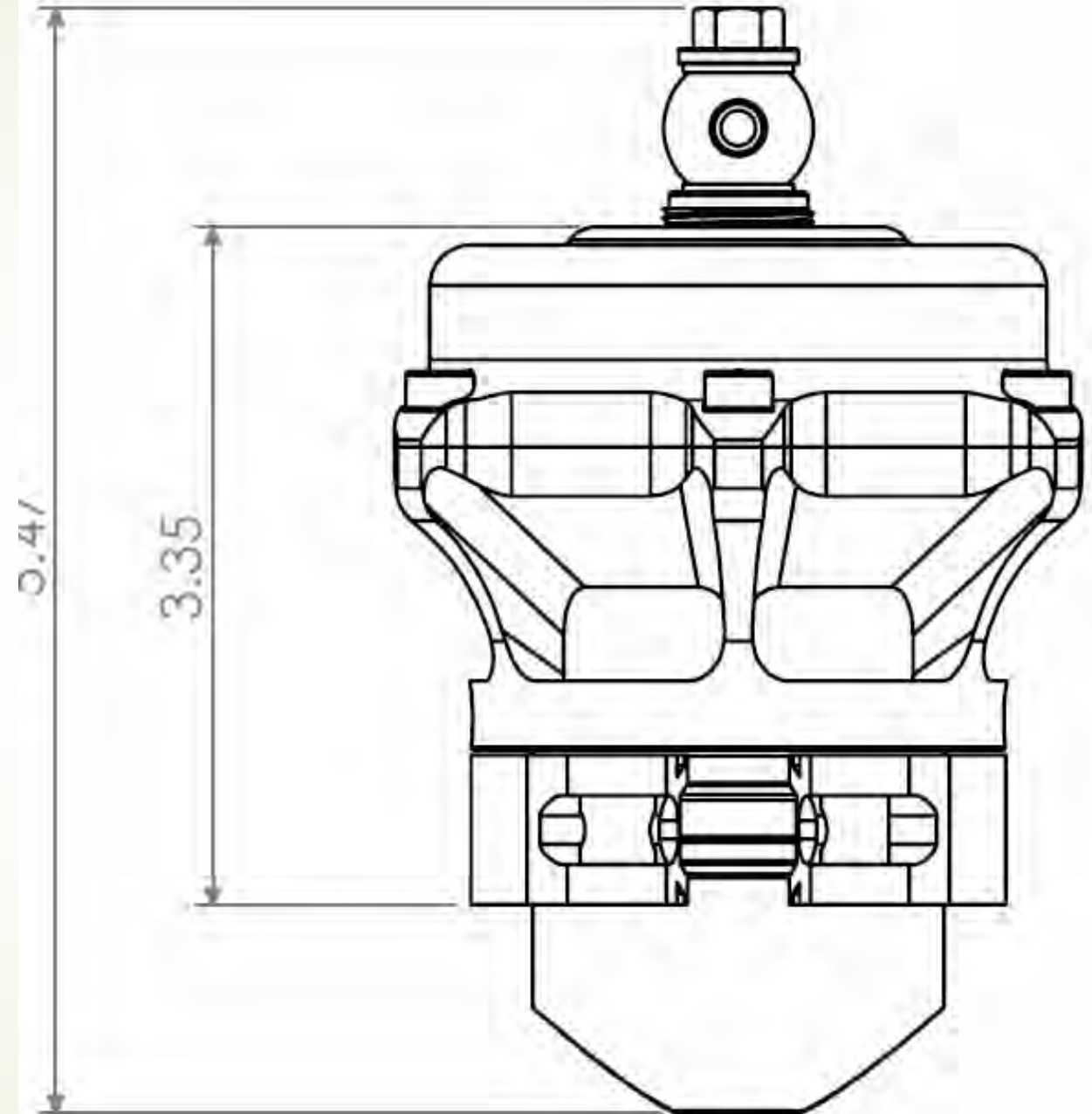
TiALSport Q/QR Data Sheet

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 Q or QR Blow-off Valve.

For any further technical questions, please email tech@tialsport.com

Configuration

- ▶ The Q and QR are installed using the supplied weld-on v-flange, billet v-clamp and Viton o-ring.
- ▶ The unit can be mounted in any position, in any orientation, but it is recommended to confirm that dirt and moisture will not accumulate in the given location or position.
- ▶ The air fitting is designed for ¼" or 6mm i.d., reinforced hose. Spring-type hose clamps are recommended.
- ▶ The signal hose must be routed to the intake manifold with no check valve or shared device.
- ▶ QR models provide for the discharge to be routed into the air inlet, upstream of the turbo inlet but downstream of the MAF Sensor. Alternative hose connection sizes are offered.



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.

PART #	Q/QR COLORS	PSI	in HG
001610	GREEN	-2	-4.1
004567	ORANGE	-4	-8.1
001611	BLACK	-6	-12.2
001612	WHITE	-8	-16.3
001608	PLAIN	-10	-20.4
001609	YELLOW	-11	-22.4
003907	BROWN	-12	-24.6

Q and QR 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)...**
- ▶ *There is no uniform answer, rather, the spring rate should be based on the customer's preference for opening rate. If the preference is for very quick response, which typically protects the turbocharger and promotes boost recovery, a value that's slightly lower than the engine's vacuum rate at idle will work best. But if the customer preference is for a 'sharper' response, a value slightly higher than the idle vacuum rate will provide that characteristic. Ultimately, though, the opening rate is very, very adjustable by way of changing springs, so it often comes down to personal preference.*
- ▶ **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 BOV such as our QR or QRJ. 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 using a QR or QRJ, and 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 -2psi spring, but if the opening rate is a bit too aggressive, a move to the -4 or -6psi 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.*

Exploded View and Parts List

- Q and QR units are supplied with v-flange hardware, designed to be welded to the charge tube.
- V-flanges are offered in 6061AL (standard), 1018MS and 304SS, and optional radii are offered in 6061AL.
- QR models are offered with 25.4, 29, 34 and 38mm hose-type recirculation ports, and the housing is threaded if a customer wants to produce a customized connector.
- All service parts listed are available as loose items and can be found at tialsport-outlet.com

