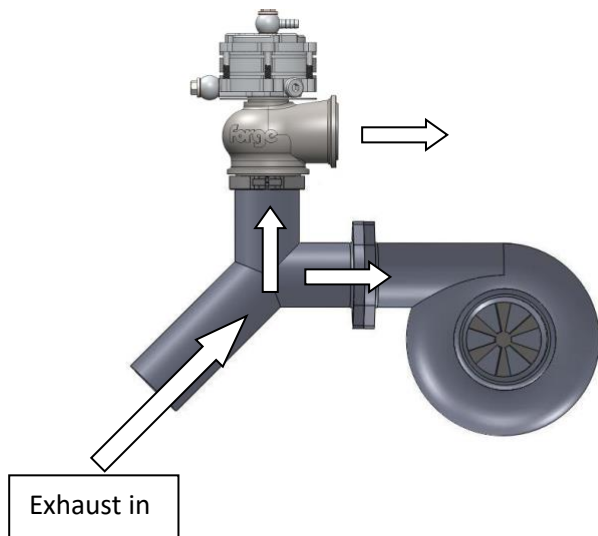




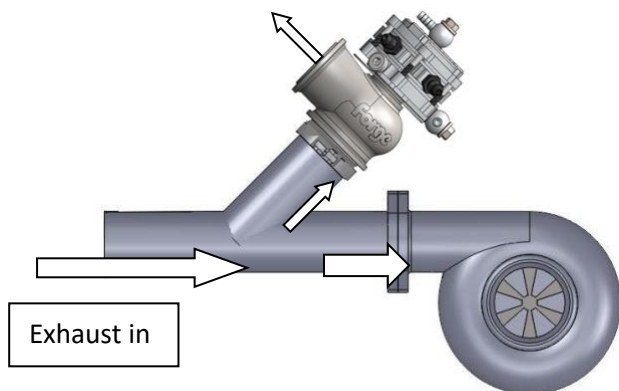
FMWCW1 - 44mm Piston Operated External Wastegate

POSITIONING YOUR WASTEGATE ON THE MANIFOLD

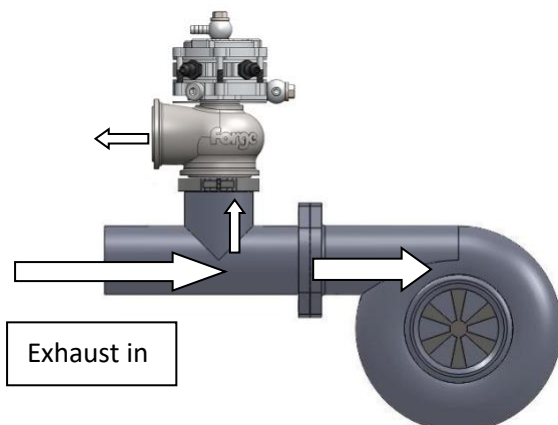
Your wastegate needs to be professionally installed using the supplied v-band weld on fitting and clamp. It needs to be installed on the collector of the manifold i.e. where all branches of the manifold meet BEFORE entry to the turbo. The wastegate will not work well at all if it is fitted to just one runner of the manifold.



Symmetrical mounting of the turbo and wastegate is excellent for boost control, but not always possible upon installation due to space constraints



Angled mounting is good for flow into the wastegate, and should be the minimum you aim for in your installation

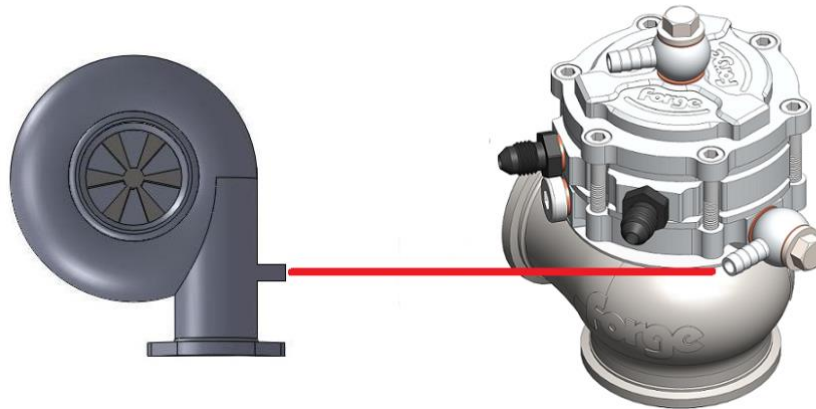


With the wastegate at 90 degrees to the flow of exhaust gas, the boost control will be compromised. Mounting the wastegate at any greater angle than 90 degrees is not recommended in any installation.

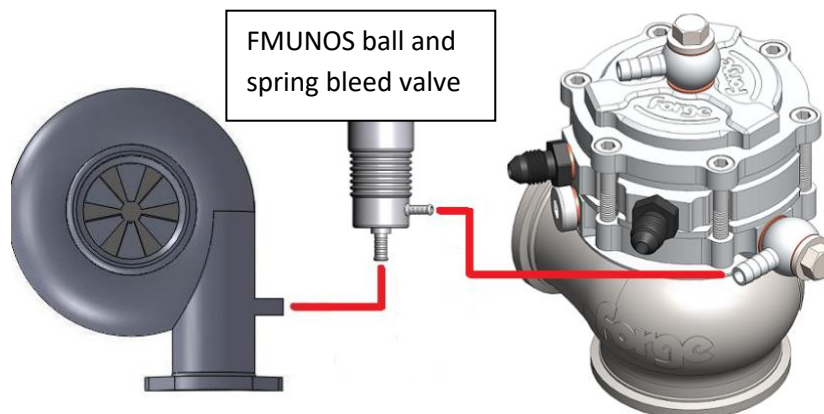
INSTALLATION

The outlet of the wastegate needs to feed back into the exhaust after the turbo in most countries, at a minimum distance of 12" (300mm) from the turbo outlet for best performance. If the car is not for road use, the outlet of the wastegate can be directed straight out and towards the ground – the exhaust gas exiting is very hot and will likely shoot flames under certain throttle conditions so make sure it is well away from any components in the engine bay.

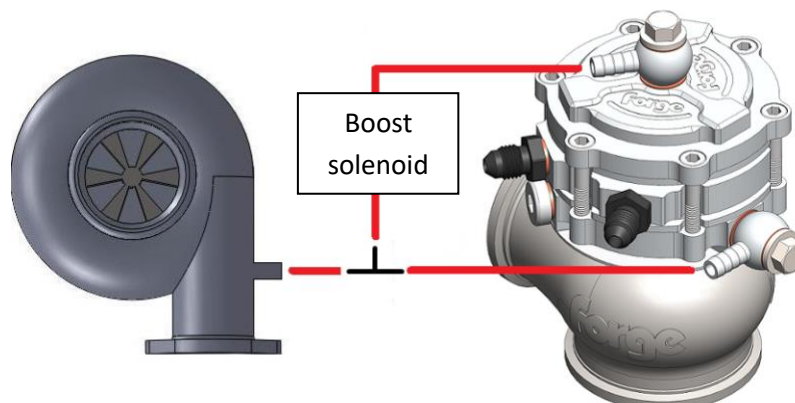
For the wastegate to limit boost to the preset spring tension, a boost line needs to be run from the turbocharger compressor housing (i.e. the turbo outlet to the intercooler) to the LOWER port on the wastegate. The upper port is left open to atmosphere.



If you are running a manual boost controller (bleed valve), simply tee into the line running to the lower port of the wastegate and set up the bleed valve according to your required boost setting.

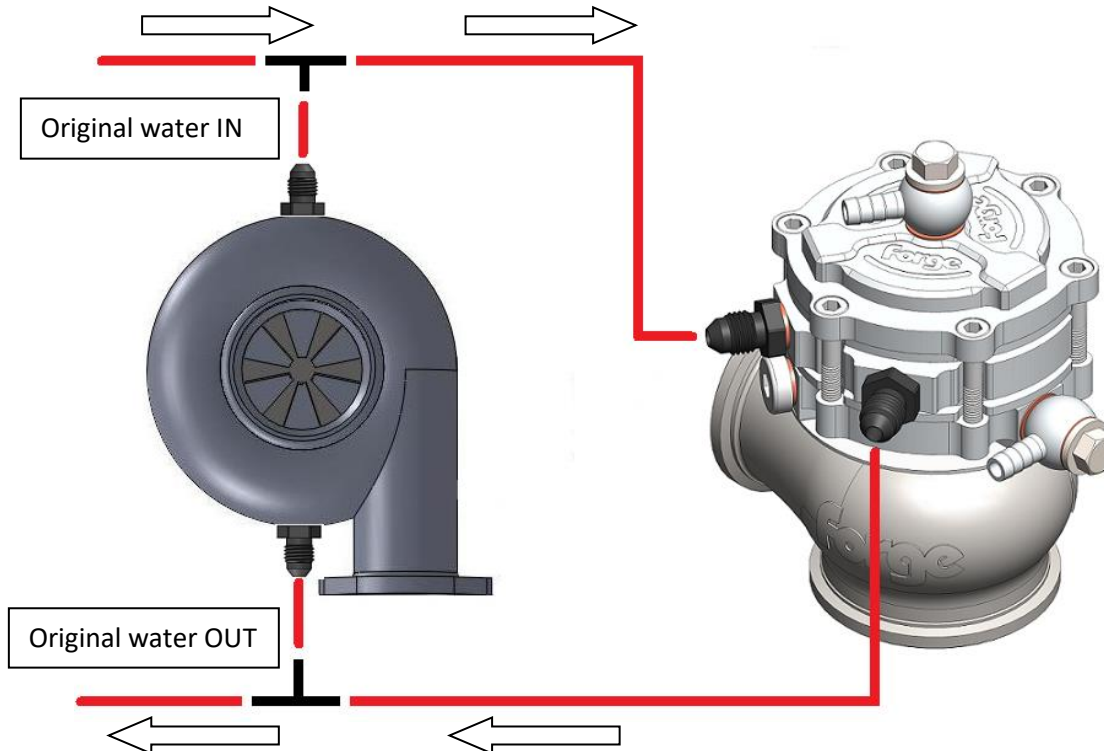


If you are running an electronic boost controller, then please follow the guidelines laid out in the boost controller instructions *based on an external wastegate setup*. A typical installation is laid out below, where the boost controller solenoid sits in a line teed off the lower port of the wastegate, going to the upper port of the wastegate to vary the resistance above the piston, but please double check for your specific boost controller.



INSTALLATION OF LINES FOR OPTIONAL WATER COOLING

There is the provision for a coolant feed to be run through the wastegate for additional cooling where the wastegate is installed in a very tight space with no airflow. The fittings are standard male dash 4 (supplied), or if removed the thread in the body is a standard M8, if you wish to run banjo fittings (not supplied). Typically the water feed and return to the turbo can be used by inserting a tee piece in each line, though please ensure the wastegate and turbo are cooled in parallel i.e. the water can go through either but not both. Either port on the wastegate can be connected to the feed.



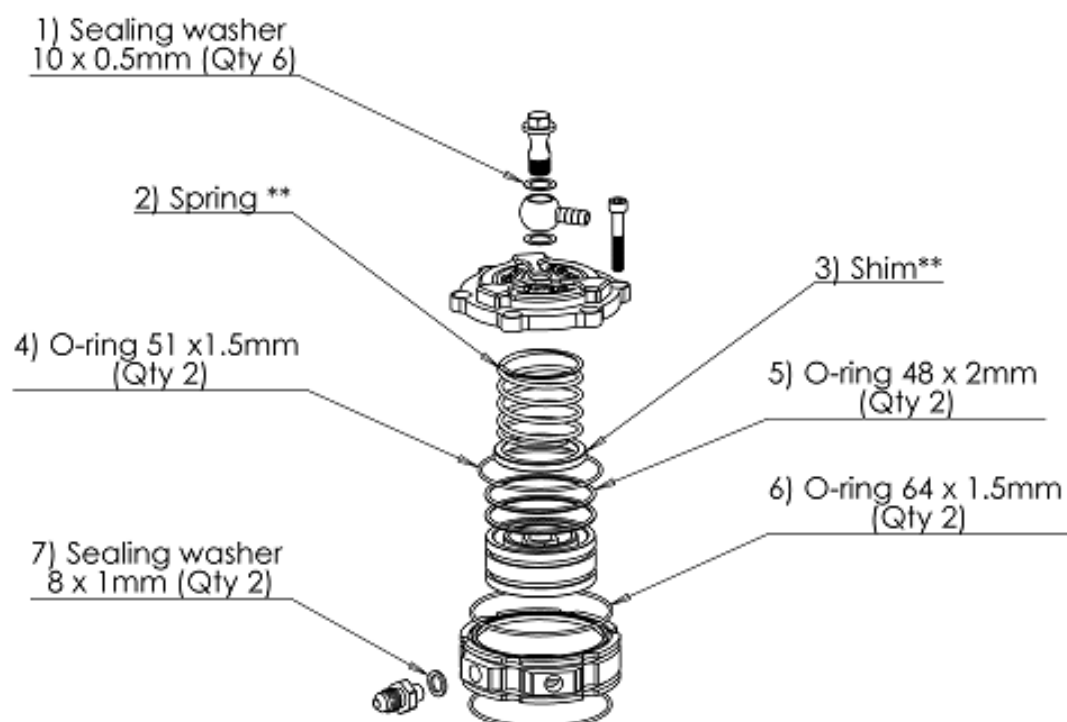
CHANGING THE WASTEGATE SPRING

Your wastegate is very highly sprung even when built with the softest spring. Care must be taken when disassembling to service it or change the spring, please take care when removing the top of the wastegate. Undo four of the six bolts holding the top down, leaving two bolts opposing one another on the top. At this point, place the wastegate in a vice/drill press and undo the last two bolts. Slowly open the vice or press in order to release the top of the wastegate from the base, and reveal the spring. Shims must be placed under the bottom of the spring, if needed. Upon reassembly, ensure the o-rings are in place on the piston as you lower the top down over it. Use the following table to ascertain the spring and shim combination suitable for your target boost pressure.

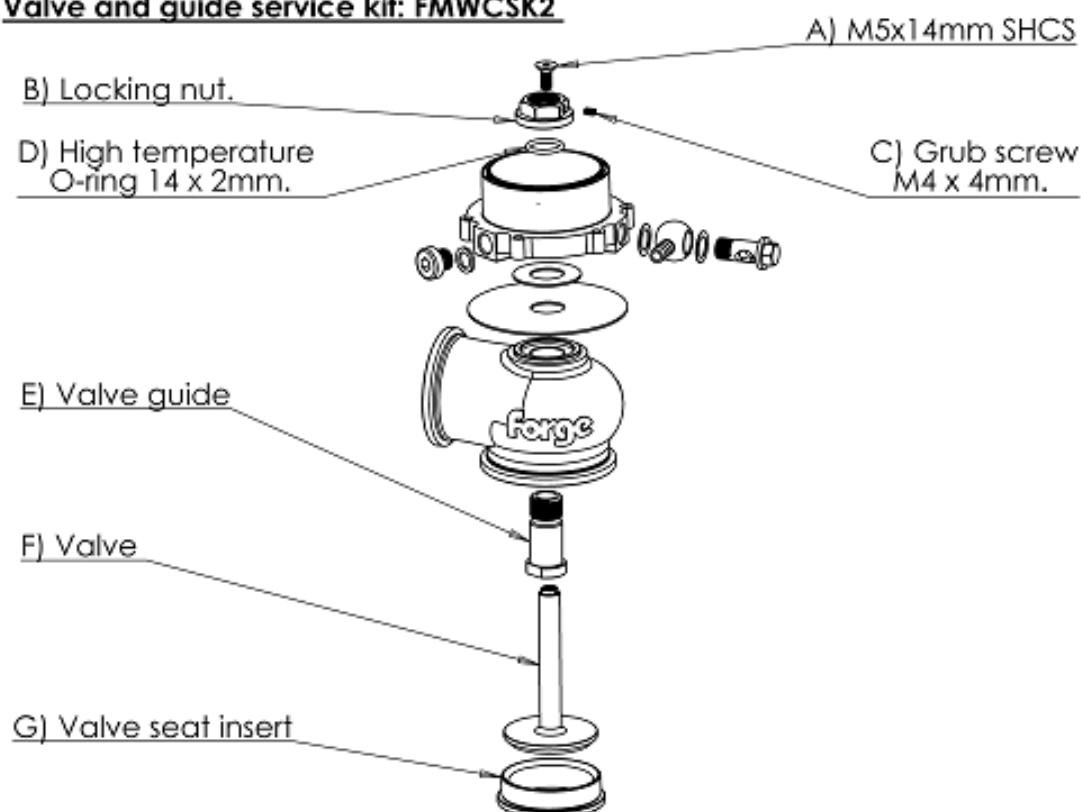
<u>Pressure (PSI)</u>	<u>Pressure (BAR)</u>	<u>Spring Configuration</u>
4	0.28	Green Spring Only
6	0.41	Green Spring + 1 x 8.5mm Shim
8	0.55	Green Spring + 2 x 8.5mm Shim
10	0.69	Yellow Spring Only
12	0.83	Yellow Spring + 1 x 6.3mm Shim
14	0.97	Yellow Spring + 2 x 6.3mm Shim
16	1.10	Blue Spring Only
18	1.24	Blue Spring + 1 x 5.1mm Shim
20	1.38	Blue Spring + 2 x 5.1mm Shim
22	1.52	Red Spring Only
24	1.65	Red Spring + 1 x 4.2mm Shim
26	1.79	Red Spring + 2 x 4.2mm Shim

Should you need to service the wastegate or disassemble it for any reason, we offer the following two service kits - FMWCSK1 and FMWCSK2, available from our website.

Piston and waterjacket service kit: FMWCSK1



Valve and guide service kit: FMWCSK2



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