

GFB WGA

Part #7306

Suits Ford XR6 Turbo



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TURBO MANAGEMENT SYSTEMS



PERFORMANCE WITHOUT COMPROMISE

GFB WGA Introduction

The GFB WGA is designed to help optimize boost response and control by using a larger diaphragm area for greater authority and control over the wastegate flap, and by allowing fine adjustment of the base boost pressure via the 3 supplied springs and turnbuckle adjustment.

PLEASE NOTE:

Adjustment and/or tuning is required when installing this product, as it will result in higher boost pressure which could damage your engine if the ECU is not tuned to suit.

GFB makes no recommendations regarding “safe” boost levels for your engine. This product is a tuning tool and maximum boost pressure should be determined by an expert, taking into account the capabilities and limitation of your specific engine and supporting modifications.

Spring Selection

Before installation, you should first determine the minimum and maximum boost pressure that you want to run, and your control method, to ensure the most appropriate spring combination is selected and installed in the WGA.

Care should be taken when selecting boost pressures, and it is always best initially to err on the conservative side, until the engine can be run on a dynamometer to ensure safety. Always consult an expert when making boost changes, and it is recommended that the car be checked on a dyno, as high boost and/or lean air/fuel mixtures can cause engine damage or worse, total failure.

If you are planning on having variable boost through the use of a boost controller, the range you can achieve depends on your turbo setup. The lowest boost your car can run is determined by the spring (this is commonly known as “gate pressure”), and boost can then be increased through the use of a boost controller.

As a rule of thumb, try to select springs so that your maximum boost is no more than double the “gate pressure”. Whilst it is possible to increase boost beyond this, you may find that boost becomes less stable and harder to control. This is because the boost controller must bleed most of the control pressure signal to the actuator, so the wastegate is less able to self-correct for changes in manifold pressure. Using a stronger spring means the controller bleeds off less of the pressure signal, giving the wastegate greater ability to regulate boost changes.

The WGA part #7306 comes with 3 springs which can be used individually or installed together to achieve different boost levels. The 5psi and 7psi springs are pre-installed for a gate pressure of 12psi, which is suitable for most tuned engines with the factory turbo.

If you require a different gate pressure, use the table opposite to determine the most appropriate spring combination.

Note that this table is only a guide to help your selection – the actual boost level achieved ultimately depends on a large number of variables, and may differ from the gate pressure shown in the table.

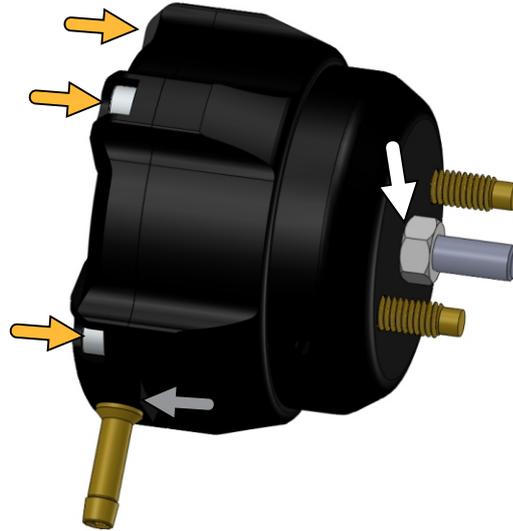
Gate Pressure (psi)	5psi Inner	7psi Middle	10psi Outer
5	●		
7		●	
10			●
12 (pre-installed)	●	●	
15	●		●
17		●	●
22	●	●	●

Changing the Springs

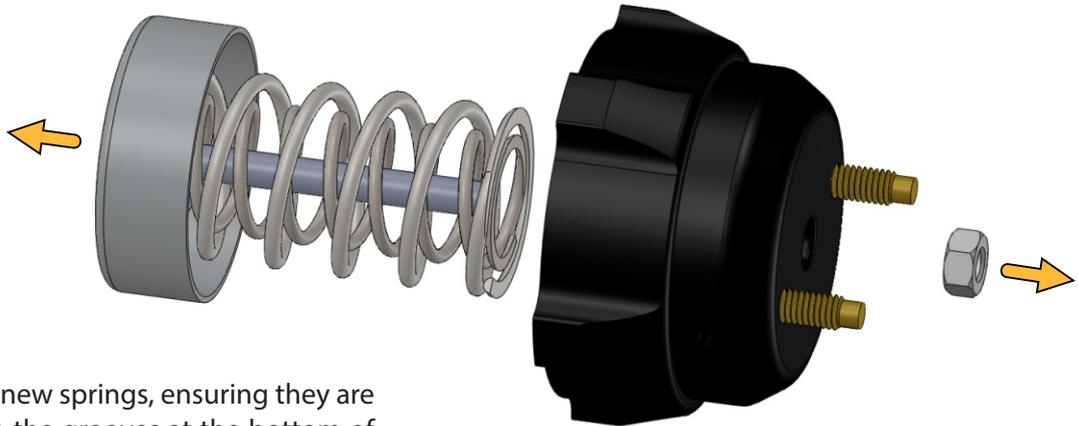
1. The spring force must be restrained before attempting to remove the cap. To do this, spin the locknut as close as possible to the body - this will prevent the spring from extending as you remove the cap →

2. Remove all five cap screws using a metric 3mm hex key →

3. Residual friction from the diaphragm sealing bead will hold the cap on even after the screws have been removed. If the cap cannot be removed by hand, it can be carefully pried off using the flat surface under the hose barb →



4. Once the cap and diaphragm are removed, unscrew the locknut completely to remove the piston, rod, and springs.

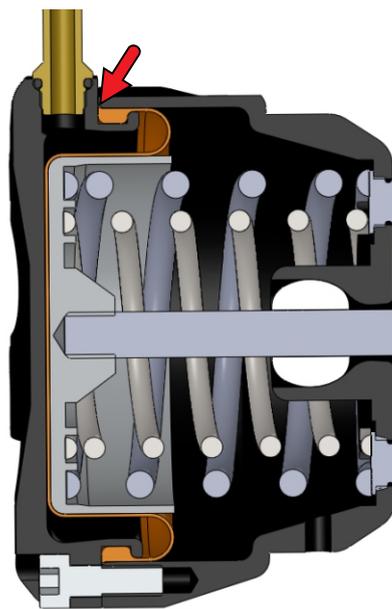


5. Install the new springs, ensuring they are correctly seated in the grooves at the bottom of the body, and on the underside of the piston

6. CAUTION: during re-assembly take care not to pinch the diaphragm as it compresses into the body (→). It can be helpful to apply a thin smear of oil or spray lubricant to the outside of the diaphragm to help it slip into the body easily.

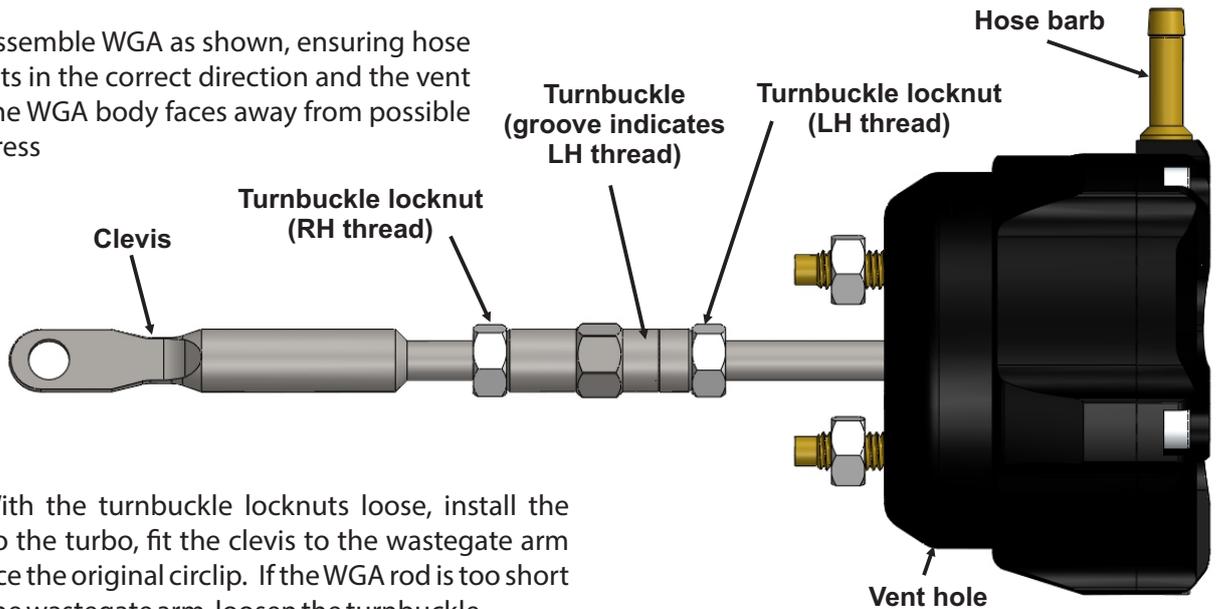
7. Ensure the diaphragm is correctly convoluted and the piston is centred in the diaphragm, then press the cap/diaphragm onto the piston using the same method of compressing the spring as used during disassembly.

8. Re-install screws



Assembly/Installation

1. Assemble WGA as shown, ensuring hose barb points in the correct direction and the vent hole on the WGA body faces away from possible water ingress



2. With the turnbuckle locknuts loose, install the WGA onto the turbo, fit the clevis to the wastegate arm and replace the original circlip. If the WGA rod is too short to reach the wastegate arm, loosen the turnbuckle.
3. Tighten the turnbuckle to the point where the slack has been taken up, then give it one more full turn. This will apply 2mm of pre-load, which is the minimum recommended position.
4. At this setting, it is likely that the "gate" boost pressure may be slightly under the rated spring pressure. Typically, a pre-load of 4-6mm achieves the rated spring pressure. You can adjust spring pre-load via the turnbuckle without removing the clevis from the wastegate flap - each full turn adjusts the pre-load by 2mm. Once you have set the adjustment, tighten both locknuts (remembering that the locknut closest to the WGA body is a left hand thread).
5. Ensure the hose barb is connected to the boost source/boost controller, then perform a boost run to do a final check the boost level.

Warranty

WARNING:

GFB recommends that only qualified motor engineers fit this product. GFB products are engineered for best performance, however incorrect use or modification may cause damage to or reduce the longevity of the engine/drive-train components.

GFB LIFETIME WARRANTY:

Our commitment to quality means that when we put our name to something, we are also staking our reputation on it. That's why we back our products with the best warranty in the business!

You should expect a lifetime of use from a well-engineered product, so if your GFB product fails as a result of defective materials or faulty workmanship whilst you remain the original owner, we will repair or replace it (limited only to the repair or replacement of GFB products provided they are used as intended and in accordance with all appropriate warnings and limitations. No other warranty is expressed or implied).

If a fault occurs as a result of usage outside of the terms of the warranty, or you are not the original owner, fear not, we can still help you. You should never need to throw a GFB product away, as spare parts are available and won't cost the earth.

TECH SUPPORT:

We want you to get the best advice, first time. That's why our engineers are available to answer any technical questions you may have. Head to www.gfb.com.au/contact-us to get in touch.