

# GFB WGA

## Part #7305

For Subaru STi MY99-22

*(also suits most IHI VF-series single-scroll turbos)*



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# GFB

GO FAST BITS

## 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.

**Boost pressure 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.**

### **WARNING:**

**It is HIGHLY recommended that an appropriate boost cut is enabled in the ECU to protect your engine from overboost.**

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

The WGA part #7305 comes with 3 springs which can be used individually or combined to achieve different boost levels. The 5psi and 10psi springs are pre-installed for a nominal "gate pressure" of 15psi.

If you require a different gate pressure, see page 4 for more info.

## 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).

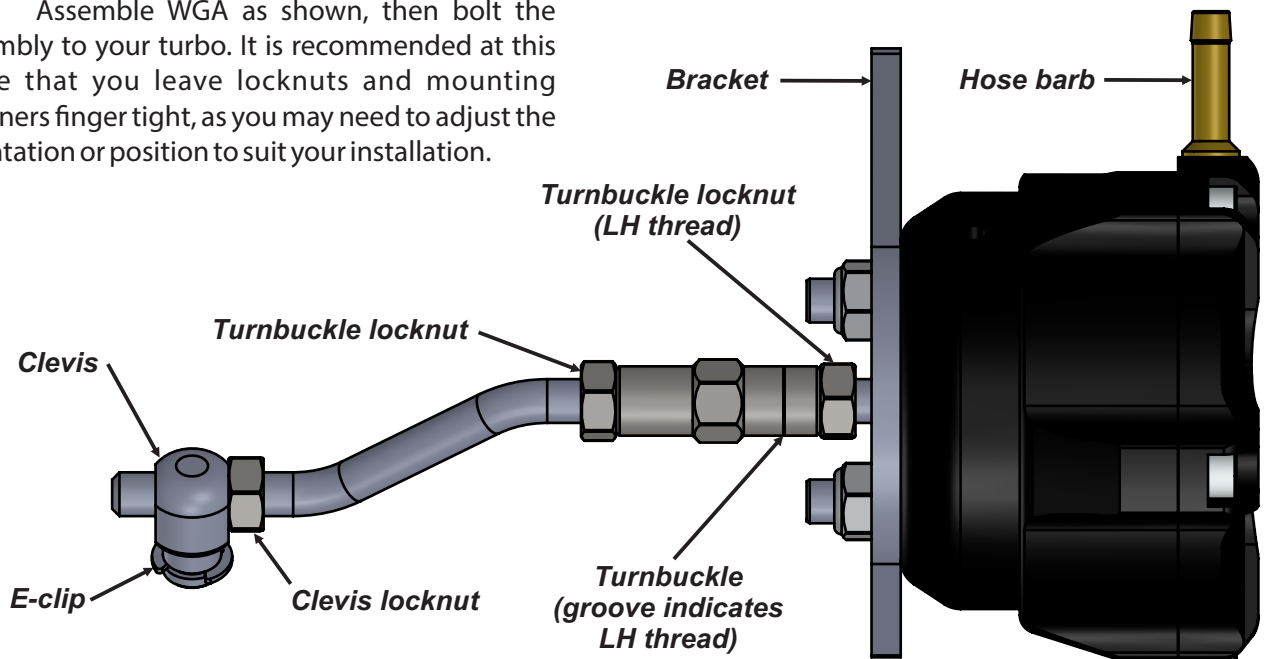
If a fault occurs as a result of usage outside of the terms of the warranty, or you are not the original owner, fear not, we can still help you. You should never need to throw a GFB product away, as spare parts are available and won't cost the earth.

### **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](http://www.gfb.com.au/contact-us) to get in touch.

## Assembly/Installation

1. Assemble WGA as shown, then bolt the assembly to your turbo. It is recommended at this stage that you leave locknuts and mounting fasteners finger tight, as you may need to adjust the orientation or position to suit your installation.

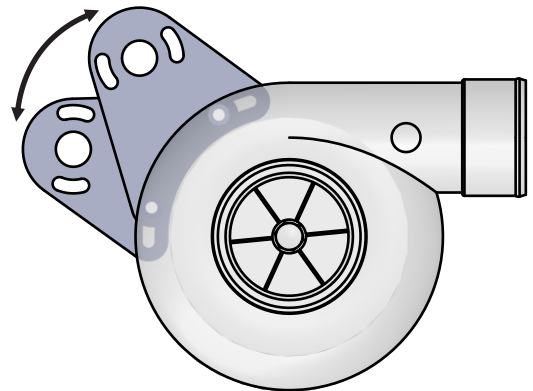


2. Ensure the turnbuckle has at least 5mm of thread engaged, then adjust the clevis position so it aligns with the hole in the wastegate arm. It is NOT necessary at this point to apply pre-load to the rod, that can be done after step 3. Attach the clevis to the wastegate arm, and secure with the supplied e-clip.

3. Check the position and orientation of the actuator and bracket and make adjustments (if required) to ensure that:

- The vacuum barb points where you want it
- The actuator rod is as straight as possible where it exits the WGA body
- There is sufficient clearance between the actuator and surrounding parts e.g. oil/coolant lines, heat shield etc.

Note that the bracket can be used in either orientation (as shown opposite) to allow a large range of actuator position adjustment.



4. Tighten all mounting fasteners.

5. Now apply spring pre-load by tightening the turnbuckle (turn it clockwise when viewed from the front of the WGA). Each full turn equals 2mm of pre-load, this is the minimum recommended pre-load. In most cases however, the rated "gate pressure" is achieved with approximately 4-6mm of pre-load, depending on vehicle modifications.

6. Tighten all remaining locknuts, remembering the one closest to the WGA body is a left-hand thread.

7. Ensure the hose barb is connected to the boost source/boost controller, then perform a boost run to check the boost level. If boost pressure is too low, increase the pre-load via the turnbuckle.

## Spring Selection Tips

- Select a spring combination that is equal to or slightly below your lowest target boost.
- For best spool up and control stability, the selected WGA spring combination should achieve 50-90% of your highest target boost.

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

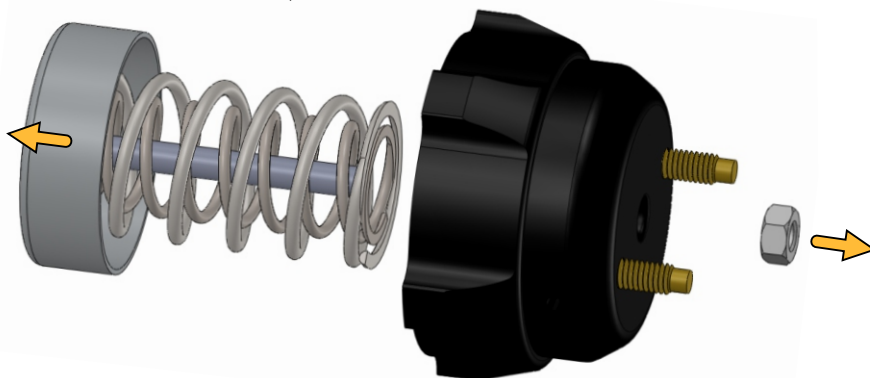
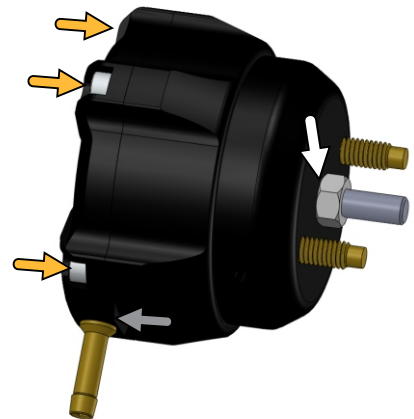
- The actual gate pressure achieved may differ slightly from the “rating” shown in the table above due to the many variables involved in the turbo system. E.g. a car with a stock exhaust will likely achieve a slightly different gate pressure than a car with a high-flowing exhaust.
- The WGA allows a considerable amount of pre-load adjustment via the clevis and turnbuckle to fine-tune the gate pressure, and bridge the gaps between spring combinations. Typically, the “rated” boost pressure of a spring combination is achieved with 4-6mm of pre-load, allowing you room to adjust the boost pressure up or down if required.

## 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 prevents the spring from extending as you remove the cap

2. Remove all five cap screws using a 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 spring combination, ensuring they are correctly seated in the grooves at the bottom of the body and 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 reassemble the cap in the reverse order of removal

