

Product Name: **IWG75**
Product Description: Internal wastegate actuator range with a clevis
Product Number: TS-06XX-XXXX



IMPORTANT NOTES ON YOUR IWG75 INTERNAL WASTEGATE ACTUATOR

- Consult your local specialist before setting your desired boost pressure, setting boost beyond your engines capability may result in engine damage.
- **Allow for adequate cool airflow around the top diaphragm housing**

RECOMMENDATIONS

- Turbosmart recommends that boost pressure is set using a Dynamometer and not on public roads.
- Turbosmart recommends that a boost gauge be permanently fitted to the vehicle.
- Turbosmart recommends that the engines Air/Fuel ratio is checked while setting the desired boost pressure, as any increase in boost pressure can cause the engine to run "LEAN", resulting in possible engine damage.

BASIC COMPONENTS OF YOUR IWG75 INTERNAL WASTEGATE ACTUATOR



IWG75 with Ø8.2mm clevis



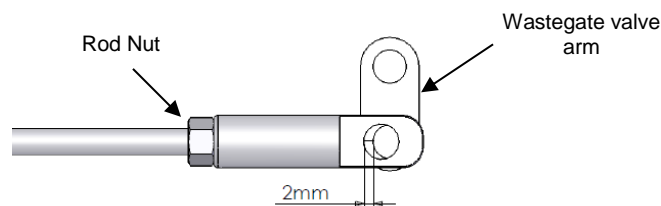
IWG75 with Ø6.3mm clevis

MOUNTING YOUR IWG75

Depending on the kit purchased, the IWG75 might not be provided with a bracket. You will need to either modify the existing bracket of the standard internal wastegate actuator or fabricate a bracket. The spacing for the mounting is 34mm. The fabricated bracket should be made from an appropriate material such as stainless steel that can handle high temperature and withstand high spring forces. Use the supplied nuts and spring washers to secure the IWG75 to the bracket.

The Rod in the Universal IWG75 uses a 1/4" UNF thread which can be used with a variety of different clevises to fix the end of the rod to the wastegate valve.

When installing the clevis of the IWG75 onto the wastegate valve arm, make sure that there is 2mm of preload. Then use compressed air (do not apply air pressure supply higher than 3 bar (40 psi) gauge). This is required to pressurise the IWG75 so that the clevis can be hooked onto the wastegate valve arm easily. Remember to reinstall the standard R-Clip or circlip to secure the clevis to the wastegate valve arm. Then tighten the rod nut to secure the clevis onto the rod.



ACHIEVING YOUR TARGET BOOST PRESSURE

There are various factors involved in achieving your target boost pressure including:

- The size of the spring fitted in your wastegate actuator i.e. the boost pressure achieved by the wastegate actuator spring only.
- The desired level of boost pressure and the difference between this and your wastegate spring pressure.
- The size of your turbocharger and wastegate and the resulting exhaust manifold backpressure in your system.

Turbosmart recommends the ideal setup for achieving your target boost pressure is to use the wastegate actuator in conjunction with a Turbosmart boost controller.

IMPORTANT NOTES ON SETTING THE WASTEGATE ACTUATOR SPRING PRESSURE

A stiffer spring should only be used when necessary. The wastegate actuator allows for different combinations of spring pressures. All springs that are adaptable with the wastegate actuator are shown in the table below. The tuner can use combinations of up to 3 springs to achieve the following base boost pressures. To aid in the identification of these springs they are supplied colour coded. If this colour coding is not clear please use the dimensions in the following table to identify the spring. Please see the following detailed instructions on setting your wastegate actuator spring pressure. The springs chosen should be rated to the lowest boost level desired.

Notes:

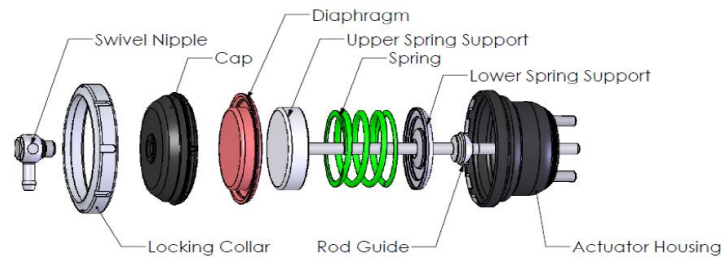
1. As a rough guide it is possible to double the base pressure when accompanying a Turbosmart IWG75 with a Turbosmart boost controller if the system is adequately sized. Results will vary depending on every application.
2. Check the spring combination in your IWG75. If more springs are required, they can be purchased from your Turbosmart dealer by using the TS-xxx-xxxx part numbers shown below each spring.

Pressure rating			3 PSI Inner	5 PSI Inner	7 PSI Middle	11 PSI Middle	10 PSI Outer	7 PSI Outer
Part number			TS-0505-2001	TS-0505-2002	TS-0505-2003	TS-0505-2004	TS-0505-2005	TS-0505-2006
Colour			BRN/BLK	BRN/GRY	BRN/PUR	BRN/RED	BRN/BLU	BRN/PNK
Dimensions			29mm OD, 32mm Length	29mm OD, 36mm Length	36.5 OD, 43mm Length	36.5 OD, 52mm Length	44mm OD, 68mm Length	44mm OD, 57mm Length
Desired Boost Pressure								
PSI	BAR	KPa						
3	0.207	20.68	▲					
5	0.345	34.47		▲				
7	0.483	48.26			▲			
10	0.69	68.95					▲	
11	0.76	75.84				▲		
12	0.827	82.74		▲	▲			
13	0.89	89.6	▲				▲	
14	0.965	96.53			▲			▲
15	1.03	103.4		▲			▲	
16	1.1	110		▲		▲		
17	1.172	117.2			▲		▲	
19	1.31	131		▲	▲			▲
20	1.38	138	▲		▲		▲	
21	1.45	145				▲	▲	
22	1.517	151.7		▲	▲		▲	
23	1.59	159		▲		▲		▲
24	1.655	165.5	▲			▲	▲	
26	1.793	179.3		▲		▲	▲	

Changing the springs

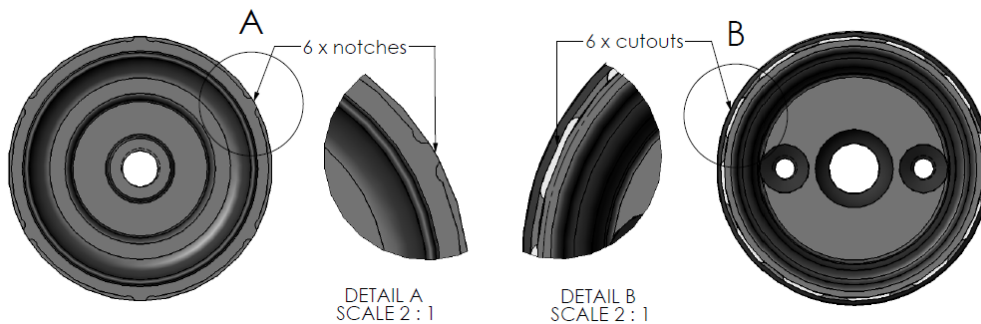
WARNING! Fitting a wastegate actuator with a higher spring pressure may cause a higher than expected increase in boost pressure.

Turbosmart recommends adjusting your boost controller back to its minimum setting and measuring the new minimum boost pressure achieved by the new spring, before increasing your boost pressure again



IMPORTANT: A press or clamping device must be used when removing or installing the collar as clamping the cap down removes the load off the collar from the diaphragm and allows the collar to be removed.

1. If the engine has been running, allow it to cool down before removing the actuator from its bracket.
2. Use a press or a vice to clamp down the cap to the body and remove collar.
3. Remove the actuator from the clamping device carefully as the cap is under spring load.
4. Remove cap, diaphragm and upper spring support with rod.
5. Change the springs making sure that they sit in the right grooves in the lower spring support
6. Reassemble in reverse order. Ensure that the diaphragm is installed in the centre of the upper spring support and when installing the cap, make sure that the cap and diaphragm are centred and that the locating notches on the cap match the cut-outs in the lower housing. **When installing the clevis, make sure that there is 2mm worth of preload.**

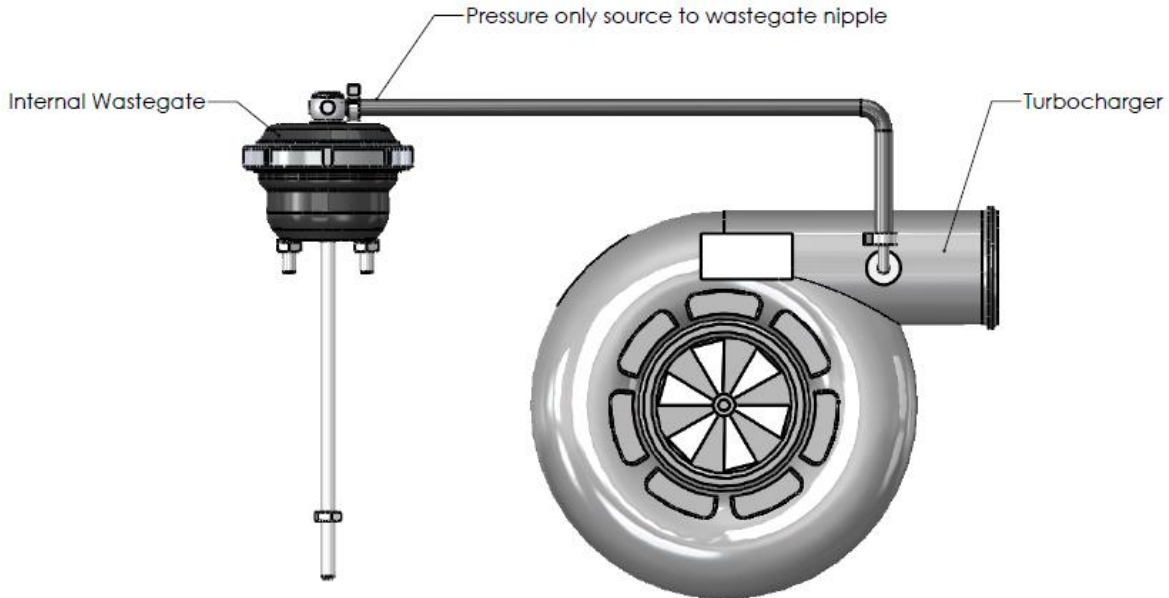


NOTES ON BOOST CONTROL HOOKUP

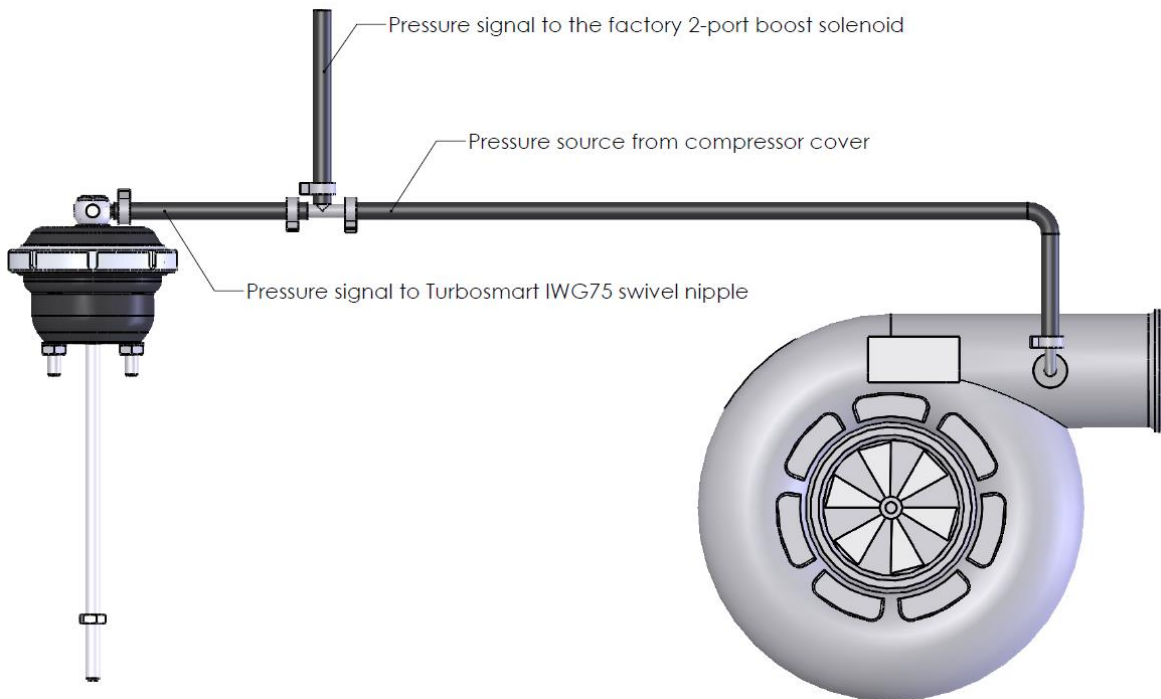
WARNING! Changing your connection method can cause a higher than expected increase in boost pressure. Turbosmart recommends adjusting your boost controller back to its minimum setting and measuring the new minimum boost pressure achieved by the new setup before increasing your boost again.

Basic setup

If no boost controller is being used connect the **BOOST PRESSURE ONLY SOURCE** to the wastegate actuator pressure nipple as shown.

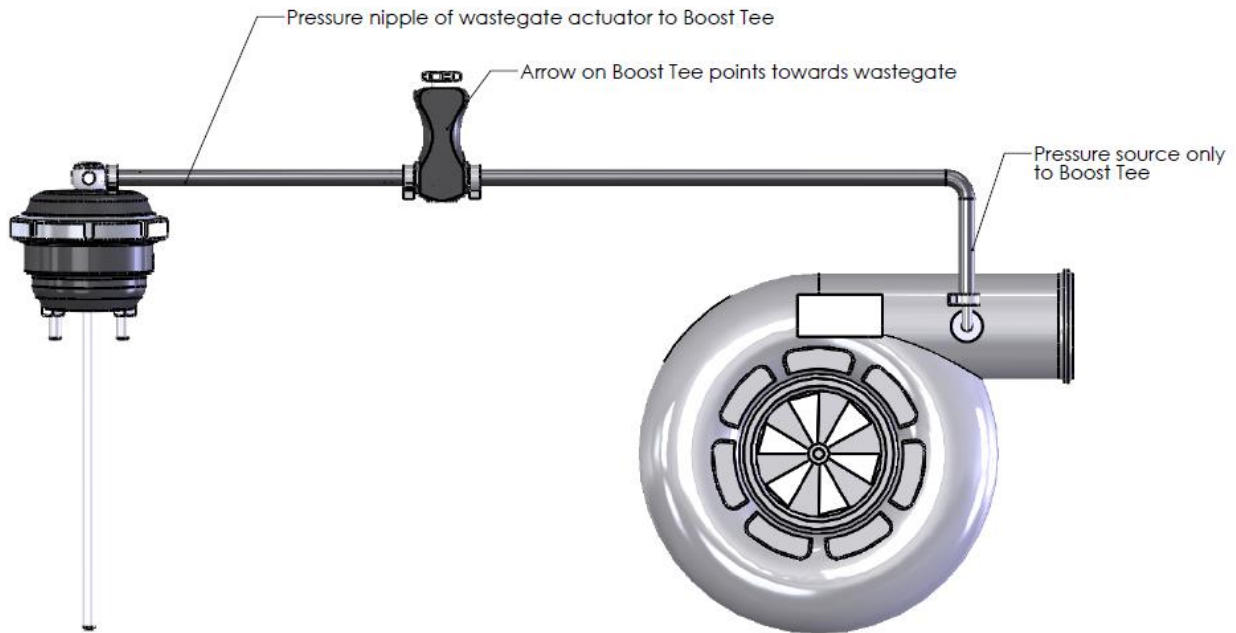


Note: Some vehicles are fitted with a "tee" type inlet port on the for the internal waste gate actuator. In such applications, when upgrading to a Turbosmart IWG75, use a hose tee-piece to supply a pressure signal to both the internal wastegate actuator and the factory 2 port boost solenoid.



Boost Tee setup

When using your wastegate actuator in conjunction with a Turbosmart Boost Tee, fit the controller between the boost pressure source and pressure nipple as shown. Ensure the arrow on the Boost Tee is pointing in the direction illustrated. Refer to the instructions supplied with your Boost Tee for further detail if necessary.



E-Boost connection methods

Turbosmart recommends using the wastegate actuator in conjunction with the Turbosmart E-Boost.

E-Boost connection Method

- Port 1 of solenoid vent to atmosphere
- Port 2 of solenoid to pressure nipple of wastegate actuator
- Port 3 of solenoid to **pressure only source**

