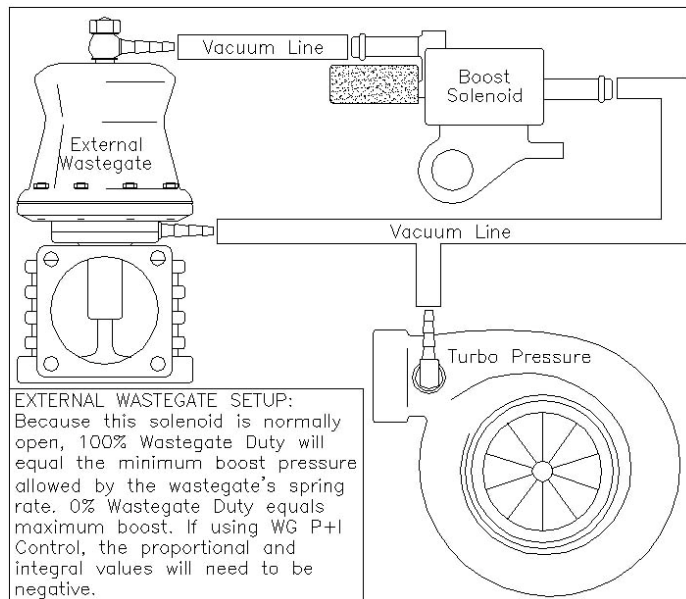


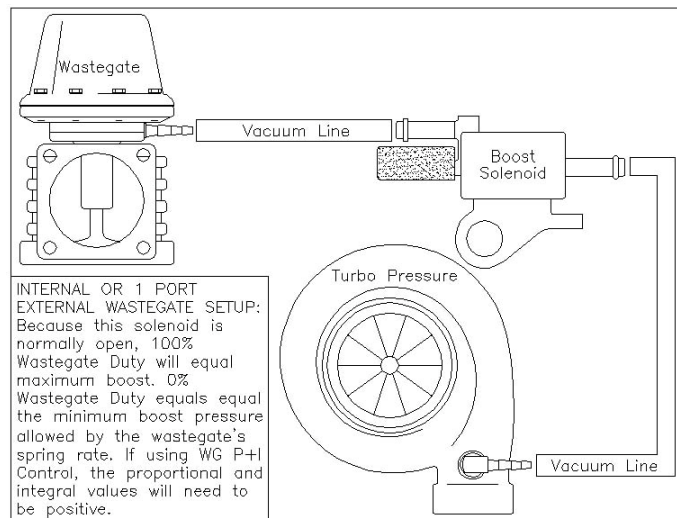
# eCtune *EBC* How-To

## Version 1.1

### 1) Config your eCtune solenoid:



External wastegate using top port



External or internal wastegate using 1 port

**Important: if 100% duty is max boost or 100% is min boost.**

2) Config solenoid in eCtune, go to **Solenoid configuration:**

Electronic Boost Controller Solenoid Configuration:

Ebc Output:

☒ Pin A11(EGR)

☐ Pin A17(AT Lockup/lab)

Solenoid Configuration:

☒ Normally Open      0% duty Maximum boost; 100% duty Minimum boost(GM)

☐ Normally Closed      100% duty Maximum boost; 0% duty Minimum boost

Minimum Duty:  %

Maximum Duty:  %

Setup the NO/NC, Output, and Duty range.

**IMPORTANT:** It is critical that the Normally Open/Normally Closed setting is selected correctly. The wrong setting will cause the turbo to build maximum boost, which could cause serious damage to the engine or turbo.

Verify carefully that the solenoid configuration works as you expected it to before applying full throttle.

### 3) Go to Ebc Settings:

Ebc Settings:

Ebc Activation Input:   
Activation: Disabled   
☐ Invert Input

Ebc Hi/Lo switch:   
Hi/Lo Select: Disabled   
☐ Invert Input

Activation Points:   
EBC Activation: -45 mbar -15.50 psi   
FastSpool Duty: 0.00 %   
Wastegate Activation: -45 mbar -15.50 psi

Ebc Target Methode:   
☒ Fixed Duty Cycle Lo: 0.00 % Hi: 0.00 %   
☐ Gear Based   
☐ Rpm Based

Target Boost Tps multiplier:   
2D

tps(%)	113	-12
multiplier	1.00	1.00

Ebc Steps:   
-> Check if input switch active   
-> EBC activation e.g. 1040mbar: holds the wastegate @ fastspool duty cylce(100% can be used)   
-> Wastegate Activation e.g. 5psi( 0.66~7.5psi(spring) ): Looks up your target psi with Rpm/Gear based   
-Target Psi found   
-Multiply target with TPS multiplier   
-Determines the duty cycle   
-Adjust dutycycle with IAT compensation   
-Adjusts dutycycle with RPM compensation

#### Options:

Set the activation input:                      Switch or always on

Hi/Lo switch:                                      Select the Hi/Lo or disable it.

Set EBC activation:                              E.g. start boost 1030mbar

→ NOTE: If Fast Spool duty is active (above 0%) and EBC activation is set below atmospheric pressure, the solenoid will click constantly with key-on-engine-off. You can changed the fixed duty cycle to see if works properly. You can try to blow air through the hoses and see if 100% duty is open or close, etc

Set Wastegate spring act:                      E.g. 15 Psi(your wastegate spring psi)

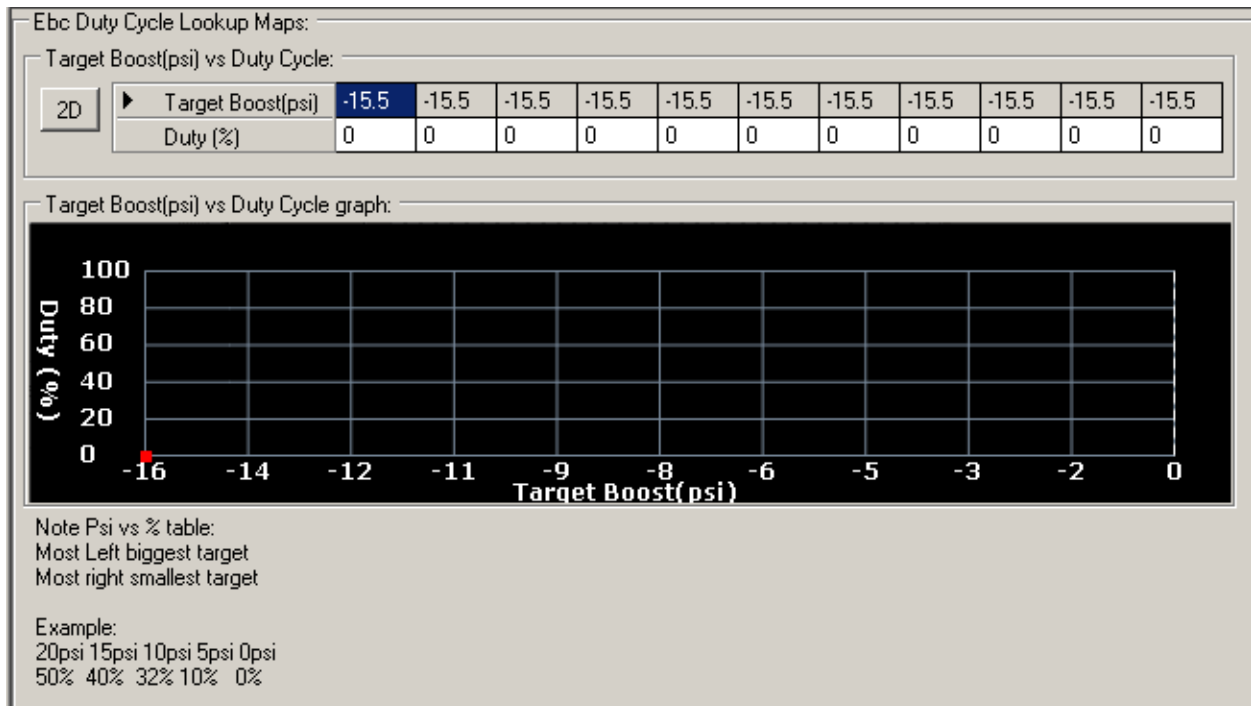
Do a pull before activating boost control, and carefully inspect your log to verify how much boost pressure is achieved mechanically by the solenoid itself. Adjust this setting to slightly below the boost level seen in the log.

Fast spool: This setting will activate the Fast Spool feature. Fast Spool helps to keep the wastegate closed until boost is achieved. Input the desired duty cycle: 100% will allow the turbo to build boost as fast as possible. 0% (disabled) builds boost more slowly, which could help traction in some cases.

Tps Multiplier: This setting allows you to reduce the boost level at low throttle. This multiplies the boost target with the current tps.  
E.g. Target 10 psi with tps 100% and 5 psi with tps 50%. To disable this feature, set both multiplier values to 1 .

### 3) Setting up Duty Lookup Map:

We need to discover which duty cycle is required for each target boost level. 11 boost levels can be pre-set.



For now, select fixed duty cycle in the ebc settings page..

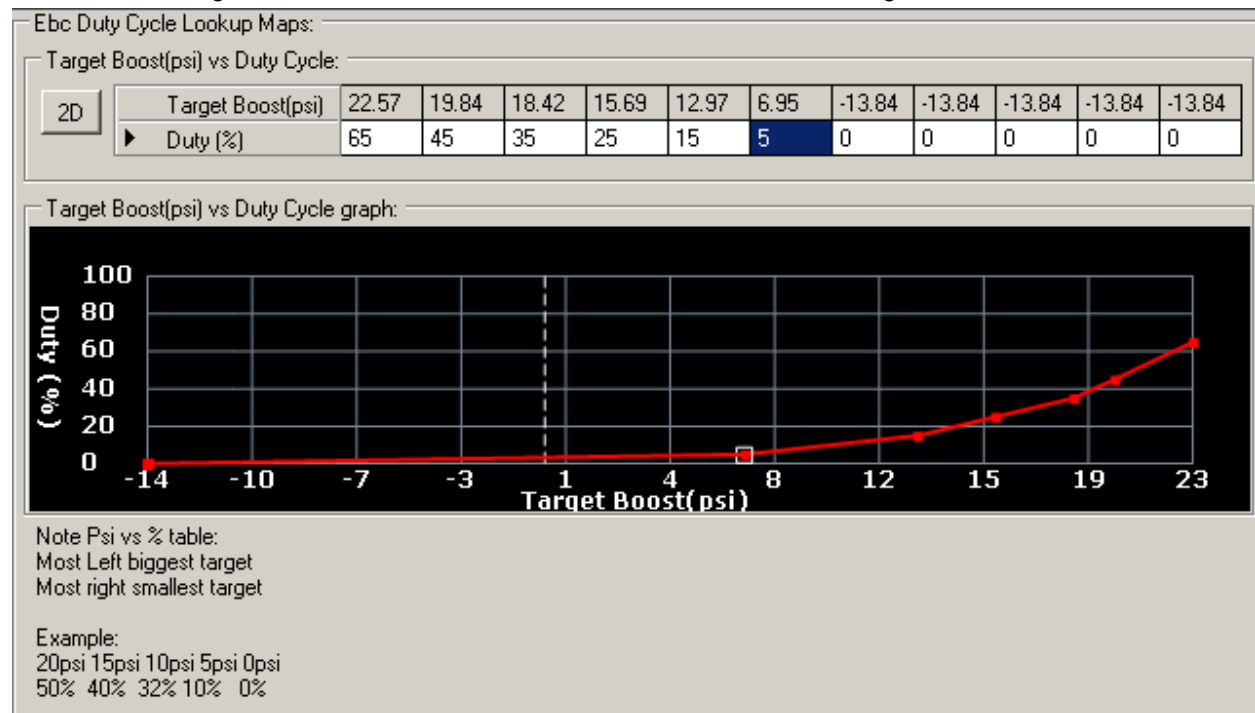
Ebc Target Methode:

☒ Fixed Duty Cycle    Lo:  %

Set duty cycle to 5% and do a pull. Note the boost level achieved for each setting, increasing duty cycle with 5% for each pull. Remember to save the logs – you will need them later to fine tune the settings.

Modify the “target boost(psi)columns” to suit the boost levels you need to pre-set..

IMPORTANT: Highest boost levels to the left, lowest boost levels to the right.



#### 4) Select the target lookup method

Ebc Target Methode:

☒ Fixed Duty Cycle    Lo:  %  
                                       Hi:  %

☐ Gear Based

☐ Rpm Based

Go to **Gear based target Maps** and setup your target boost for each gear.

Ebc Gear Based Target Maps:

Low Boost Setting:

Gear	1	2	3	4	5
Target(psi)	11.97	14.97	19.99	19.99	19.99

High Boost Setting:

Gear	1	2	3	4	5
Target(psi)	11.97	14.97	19.99	19.99	19.99

Ebc Rpm Based Target Graph:

Gear	1	2	3	4	5
Target(psi)	11.97	14.97	19.99	19.99	19.99

Alternatively – Go to **RPM based target maps** and setup your target boost for each RPM range.

Ebc Rpm Based Target Maps:

Low Boost Setting:

2D	Rpm	11000	10000	9000	8000	7000	6000	5000	4000	3000	2000	0
	Target(psi)	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84

High Boost Setting:

2D	Rpm	11000	10000	9000	8000	7000	6000	5000	4000	3000	2000	0
	Target(psi)	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84	-13.84

Ebc Rpm Based Target Graph:

The graph displays Target(psi) on the vertical axis and Rpm on the horizontal axis. The vertical axis has major grid lines at 4.5, 9.1, 13.6, 18.2, and 22.7. The horizontal axis has major grid lines every 1100 units, from 0 to 11000. The plot area is currently empty.

## 6) Setup Compensations(Go to **Duty Compensations Maps**):

Electronic Boost Controller Duty Compensations:

IAT compensation:

2D	IAT (C)	-14	6	23	47	140
	Duty Adj(%)	-3.75	-2.00	0.00	2.00	3.75

RPM compensation:

2D	Rpm	11000	10000	9000	8000	7000	6000	5000	4000	3000	2000	0
	Duty Adj(%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Iat compensation:

Different Intake(weather) temp will make your car boost more or less. Adjust these to boost the same when the intake temp varies. These are default values.

Rpm compensation:

If you boost start to taper off or boost lower on higher rpms(small turbo's). Adjust the duty cycle here.

It is also possible to compensate for RPM ranges where the turbo naturally boosts more, and therefore reacts more as boost control is applied – causing more boost than desired.

(I will make some examples!)