

JB4 EWG Add-On Connectors (PAIR) for Kia Stinger/G70 and Infiniti VR30 Q50/Q60 Applications Install Guide

Last updated 3/11/2023

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The new EWG connections allow the JB4 to directly add and subtract wastegate duty cycle (WGDC) from the wastegates providing additional tuning flexibility. Most useful for modified vehicles that are having problems targeting boost properly and will also improve boost response, spool up, shifting performance, and overall feel.

Installation involves plugging the wires in to the JB4 harness, updating the JB4 firmware and settings, and attaching them to the wastegates which are relatively easy to reach from the engine bay.

Note: JB4 models shipped prior to October 2019 may also require an updated 2580 master chip if EWG wires trigger a startup fault code that clears until restarted.

What are the EWG connectors?

They are optional connections that attach the JB4 to the wastegate actuators on each turbo. By attaching directly in this way, the JB4 can increase or decrease WGDC in a dynamic way to improve boost targeting. The benefits are increased turbocharge response, ability to correct for under-boost or over-boost conditions, and more top end power as the JB4 is no longer capped by the ECU tuning WGDC limits. The technology is like the EWG control for BMW models the JB4 has been using running for years and includes a PID control loop for smart targeting.



Attach the pinned EWG wires to the JB4 DSUB connector. Be careful to note the connection points/numbers carefully as mistakes here will lead to fault codes and since the pin require a DSUB removal tool can be tricky to fix. If you make a mistake, you're better off cutting/splicing the JB4 wires to correct it if you do not have access to or have never used a DSUB removal tool before.

EWG Connector 1 Passenger Side:

Blue wire: Pin 19

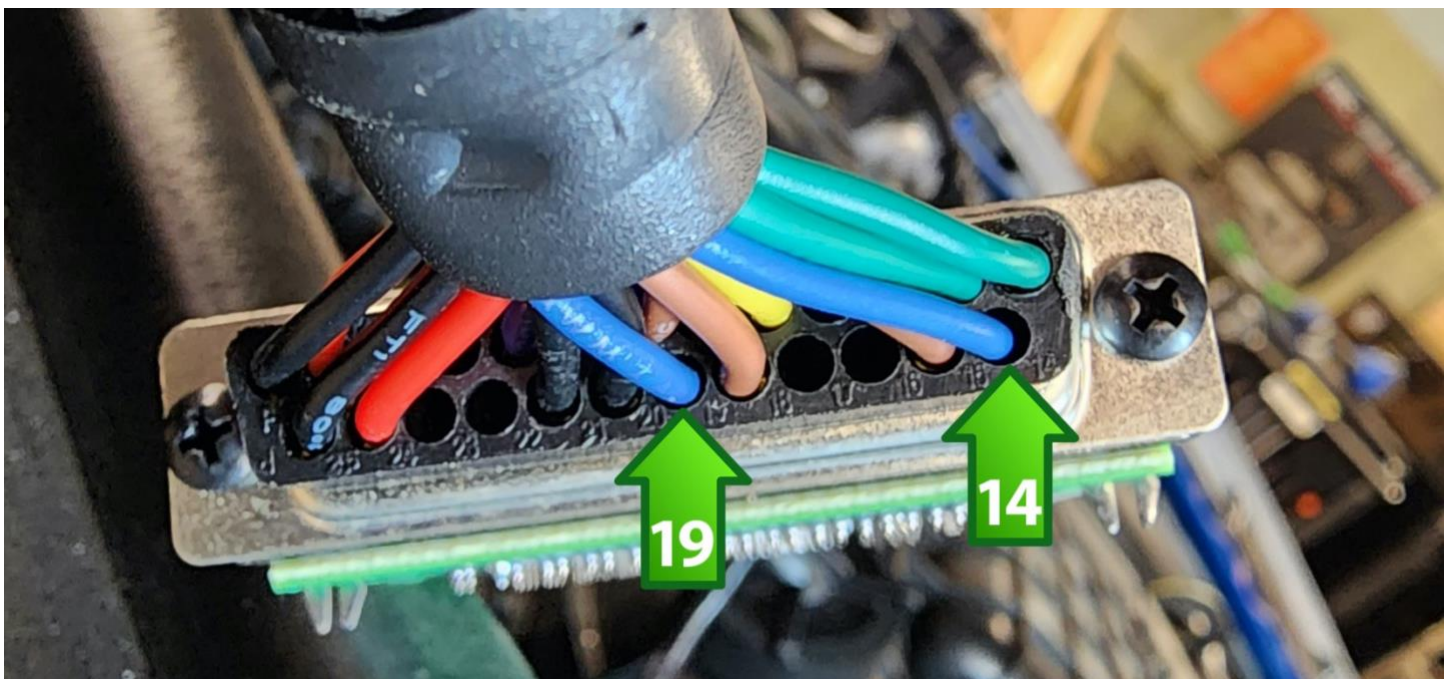
Purple Wire: Pin 9



EWG Connector 2 Driver Side:

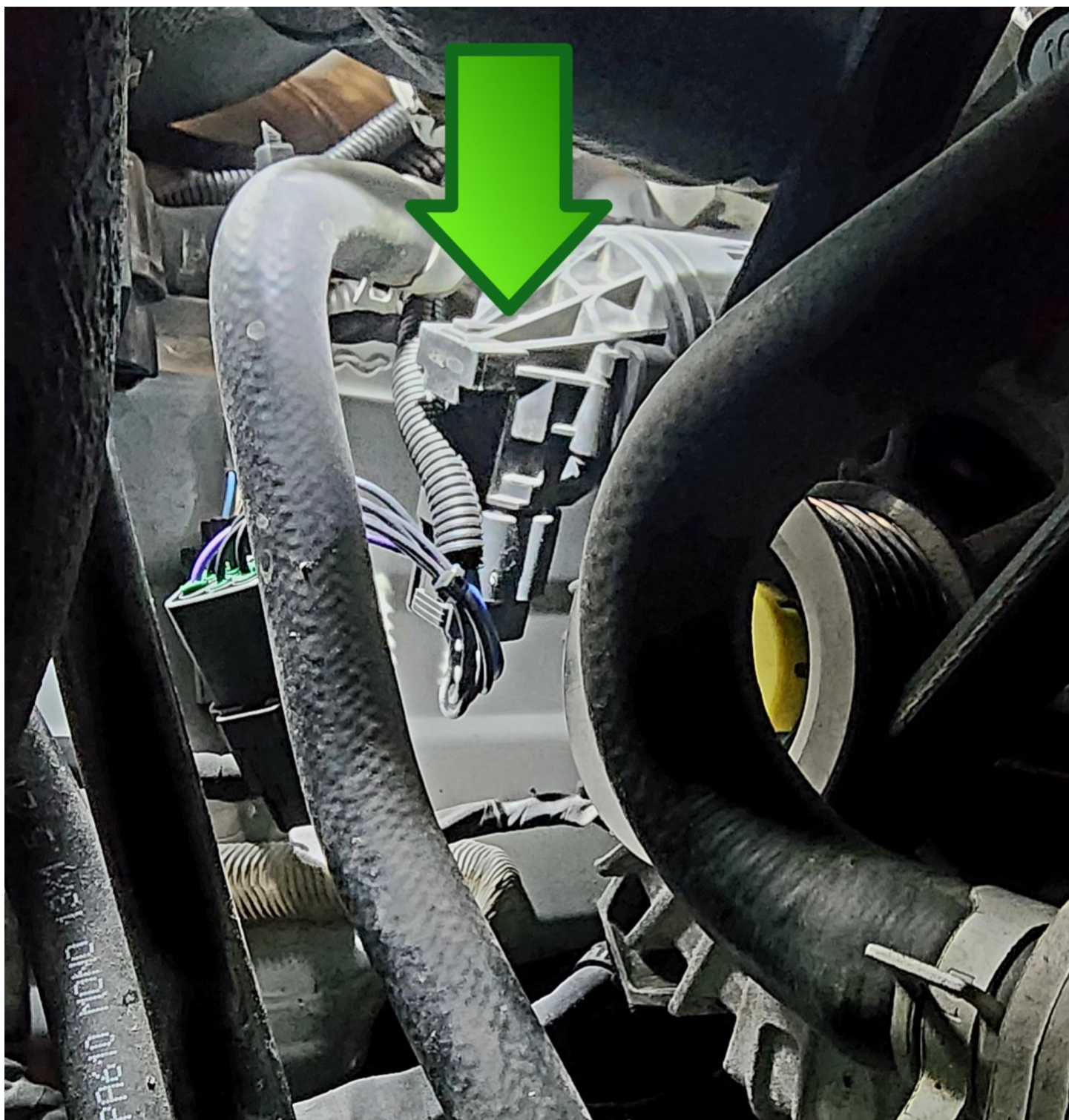
Blue wire: Pin 14

Purple wire: Pin 8



Driver side EWG connection:

Connectors are interchangeable and either connector can attach to the driver side. The connection is down by the turbo. You can reach it without removing anything on a cold engine. You may need to use a screwdriver to push the connector down while holding the clip in with your finger.



Passenger side EWG connection:

Either connector can attach to the passenger side. You may need to remove the airbox bottom to access the connector which will then be easy to see/reach.



JB4 Settings:

VR30 requires V8+ JB4 firmware.

User Adjustment:

- 1) 50 across the board under duty bias. This represents a “neutral” base EWG mapping, meaning no WGDC is added or subtracted. The base mapping is shown under the FF curve in logs. Cars that tend to over boost will need lower values (e.g. 40 or 45 across the board), and other vehicles that are under boosting will need higher values. The profile can be set by RPM to reduce top end boost taper for example.
- 2) FF set to 50, this factor is multiplied by duty bias to globally scale up or down the FF mapping.
- 3) PID gain set to 20, this determines the dynamic WGDC range, how far above or below FF WGDC can go based on boost over/under targeting.
- 4) Auto Shift Reduction set to 60, this determines how much WGDC is cut during shifts to tune turbine speed change related boost spiking.
- 5) RS models should also set options/FUD bit6 on, this setting increases the modeled flash boost target (DMEBT) which together with ECU_PSI form the basis of the PID control on WGDC.