CarBahn

INSTALLATION INSTRUCTIONS

PERFORMANCE CONTROLLER

For G8X M3 & M4, RWD & xDrive

CARBAHN PART #:

CBPRC-0040

⚠ CRITICAL – READ BEFORE INSTALLING

This harness connects to **THREE factory sensors ONLY**: two MAP sensors and the cam sensor.

Connecting a pigtail to an O2 / lambda sensor or ANY other connector WILL damage the Performance Controller and CAN damage the factory DME (ECU).

Read **page 1** to identify the correct sensors before you begin.

CARBAHN.COM/INSTRUCTIONS

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These instructions assume that the person installing these parts is a BRAND CERTIFIED MECHANIC and are NOT step by step instructions on how to disassemble and reassemble the car.

⚠ READ THIS FIRST – CORRECT CONNECTION POINTS

The Performance Controller harness has three pigtails, labeled A, B, and C. Each one connects to exactly ONE factory sensor: two MAP sensors and the cam sensor (see the table below).

There are many other factory connectors in the engine bay, including the O2 / lambda sensor connectors. NEVER connect any pigtail to them.

Connecting to the wrong connector WILL damage the Performance Controller and CAN damage the factory DME (ECU). If you are not 100% sure, STOP and call US Based Support: 866-558-4314.

The only three correct connection points

Pigtail	Sensor	Where it is
A	✓ **Lower MAP sensor**	Low on the **side of the engine**, below the intercooler water pump.
B	✓ **Manifold MAP sensor**	On **top of the intake manifold**.
C	✓ **Cam sensor**	On **top of the engine**, at the front.
✗	**Anything else**	**DO NOT CONNECT.** This includes the O2 / lambda sensor connectors.

THE UNPLUG TEST – do this before connecting each pigtail:
All three correct points are **sensors mounted on the engine**. Unplug the factory connector and look at what is left behind. If it is a sensor with no wire of its own, you are at a sensor. If what is left is **another plug on the end of a wire**, STOP – you are at the wrong connector. Plug it back into its original mate and check the table above.

Also check the letter: each pigtail goes to its own sensor only – A to the lower MAP, B to the manifold MAP, C to the cam sensor.

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Installation Steps

1 Before you begin

☐ Confirm the controller has the **correct program** for the vehicle you are working on.

☐ Confirm this is the controller with the **four zip-tie block mounts** on the back.



The controller used on this kit

2 Remove the brace, the covers and the air box

a. Remove the strut tower V-brace.

b. Pop the plastic engine cover off.

c. Remove the small cowl cover on the driver side – the aluminum brace underneath it is where the controller mounts.

d. Loosen the hose clamp and take the air box out of that corner.

e. Undo the clamp on the **intercooler water pump** and move it aside. Pigtail "A" cannot be reached until it is out of the way.



Engine bay before disassembly



Brace, covers and air box removed

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3 Connect the harness to the controller

a. The harness plug comes with a **bypass plug** installed. Undo the clip, pull the bypass plug out, and set it aside.

b. Plug the controller into the harness and squeeze the clip until it draws fully in.

This plug connects to the controller only – never to a factory connector.



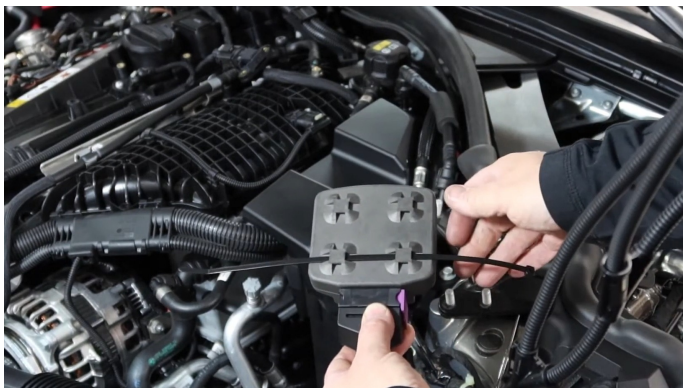
Harness plug with the purple clip

4 Mount the Performance Controller

a. The controller mounts to the **aluminum brace** exposed under the driver-side cowl cover, just in front of the brake fluid reservoir.

b. Feed the zip ties sideways across the box, through both mounts on the back.

c. Feed the ties through the hole in the aluminum brace, pull the box up into position just under the brace, then tighten and trim.



Positioning the controller under the brace



Tightening the zip ties

5 Route and identify pigtails "A", "B", and "C"

Each pigtail is labeled at the end. Check the letter before every connection – read them in good light, as "B" and "C" are easy to confuse.

Lift the small rubber trim seal at the base of the windshield, feed the harness underneath it into the engine bay, then press the trim back down.

Pigtail "A"	→ Lower MAP sensor ONLY
Pigtail "B"	→ Manifold MAP sensor ONLY
Pigtail "C"	→ Cam sensor ONLY



Feeding the harness under the trim seal



Pigtails routed into the engine bay

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6 Connect pigtail "A" to the LOWER MAP sensor

a. With the air box out and the intercooler water pump moved aside, find the MAP sensor **low on the side of the engine**, down in a hole below where the pump sits. The photo on the right shows it circled.

b. Pop the small lock back on the factory plug – a pick or small screwdriver helps, and you may need to slide it underneath to lift the lock. Squeeze the tab and pull the plug off the sensor. Do **the unplug test** – a sensor with no wire of its own must remain.

c. Plug the factory plug into the **female** plug on the pigtail.

d. Plug the **male** plug on the pigtail into the sensor, where the factory plug used to go.

e. Set **both** locks – one on the pigtail plug and one on the factory plug. Never force a connector.



Where the lower MAP sensor sits



The lower MAP sensor, circled

⚠ **STOP & CHECK: Pigtail "A" must be on the MAP sensor low on the side of the engine – NOT on any other connector.**

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7 Connect pigtail "B" to the MANIFOLD MAP sensor

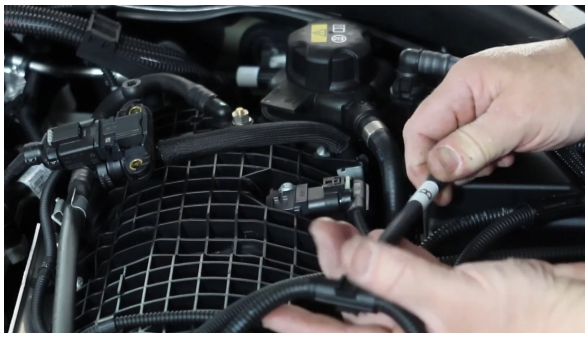
a. Locate the MAP sensor on **top of the intake manifold**.

b. Pop the small lock back on the factory plug – a pick or small screwdriver helps, and you may need to slide it underneath to lift the lock. Squeeze the tab and pull the plug off the sensor. Do **the unplug test** – a sensor with no wire of its own must remain.

c. Plug the factory plug into the **female** plug on the pigtail.

d. Plug the **male** plug on the pigtail into the sensor, where the factory plug used to go.

e. Set **both** locks – one on the pigtail plug and one on the factory plug. Never force a connector.



Pigtail "B" at the manifold MAP sensor

⚠ **STOP & CHECK: Pigtail "B" must be on the MAP sensor on top of the intake manifold – NOT on any other connector.**

8 Connect pigtail "C" to the CAM sensor

a. Locate the cam sensor on **top of the engine**, at the front.

b. Pop the small lock back on the factory plug – a pick or small screwdriver helps, and you may need to slide it underneath to lift the lock. Squeeze the tab and pull the plug off the sensor. Do **the unplug test** – a sensor with no wire of its own must remain.

c. Plug the factory plug into the **female** plug on the pigtail.

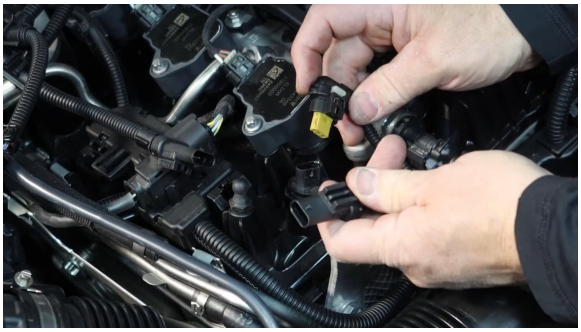
d. Plug the **male** plug on the pigtail into the sensor, where the factory plug used to go.

e. Set **both** locks – one on the pigtail plug and one on the factory plug. Never force a connector.

f. Seat the pigtail plug with its **lock facing rearward** – that is the only way it sits properly here.



The cam sensor on top of the engine



Pigtail "C" connected at the cam sensor

⚠ **STOP & CHECK: Pigtail "C" must be on the cam sensor on top of the engine – NOT on any other connector.**

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9 Secure the harness and reassemble

a. Zip tie the harness down along its whole run so nothing can move into the belts, the fan or anything hot.

b. Refit the intercooler water pump and tighten its clamp.

c. Refit the air box and tighten the hose clamp.

d. Refit the cowl cover, the engine cover and the strut tower V-brace.



Harness routed and tied down

⚠ FINAL CHECK – BEFORE STARTING THE ENGINE

- ☐ Pigtail **"A"** is on the **lower MAP sensor** (side of the engine, below the intercooler water pump), and its factory plug is connected to pigtail "A".
- ☐ Pigtail **"B"** is on the **manifold MAP sensor** (top of the intake manifold), and its factory plug is connected to pigtail "B".
- ☐ Pigtail **"C"** is on the **cam sensor** (top of the engine), and its factory plug is connected to pigtail "C".
- ☐ No pigtail is connected to an O2 / lambda connector or any other factory connector.
- ☐ Every factory connector you unplugged is reconnected. Both locks are set at every connection.
- ☐ The controller is zip-tied tight under the aluminum brace and the harness plug is fully drawn in.
- ☐ The intercooler water pump, air box, cowl cover, engine cover and V-brace are all back on, and every clamp is tight.

If you cannot check every box, DO NOT start the engine. Call US Based Support: 866-558-4314.

NEXT STEP: REGISTER & PAIR YOUR CONTROLLER

Once the installation is complete and the final check has passed, scan the QR code to open the **Controller Registration & Pairing Guide**.

Or visit: carbahn.com/pages/performance-controller-setup