



BMP Calibrations LLC
 Brad Penet, Owner/Tuner

TUNING GUIDE FOR JEEP JL/JT

If you have any questions about anything, email Brad at brad@bmpcalibrations.com, or call/text at 618-977-5844.

*** 2021-2023 models have either GPEC2A OR GPEC5. ECU is located under the hood, typically next to the windshield washer fluid container or along the firewall, connectors on the side means you have a GPEC2A, connectors on the top means you have a GPEC5, no matter which one you have, the ECU must be removed and unlocked before tuning, see below for instructions***

***If you already own a Tazer or other type of SGW bypass cable, you don't need the HPT Smart access cable.

COST BREAKDOWN

Please note that my price includes UNLIMITED revisions, full data log review, consultation if you want to do your own tweaks, plus more than one tune for any octane fuel you want at any time, my charge is a one-time flat fee for your Jeep.

GPEC2A MODELS **ECU Connectors on SIDE of the ECU		GPEC5 MODELS **ECU Connectors on TOP of the ECU	
18-23 JL/JT 6MT	18-23 JL/JT 8MT	21-26 JL/JT 6MT	21-26 JL/JT 8AT
TO BMP CALIBRATIONS FOR TUNING		TO BMP CALIBRATIONS FOR TUNING	
\$350	\$450	\$350	\$450
HP TUNERS MPVI4 – ***Works on multiple vehicles/platforms at one time** \$400			
HP TUNERS DODGE SMART ACCESS CABLE (If you don't have a SGW bypass already) \$90			
HP TUNERS UNIVERSAL CREDITS ***One Time Purchase, \$50 each***			
2 credits = \$100	6 credits = \$300	4 credits = \$200	8 credits = \$400
PCM UNLOCK SERVICE			
Free with new MPVI4 and 6 credits through HP Tuners, otherwise \$250, may be cheaper at other shops		\$250 through HP Tuners	
TOTALS (ASSUMING YOU STARTED WITH NOTHING/WORST CASE)			
<u>\$1140*</u>	<u>\$1240*</u>	<u>\$1290</u>	<u>\$1590</u>

*GPEC2 pricing is based on you getting unlocked ECU discount with 6 credits through HP Tuners. GPEC2 6MT models will cost \$1190 if you don't take advantage of the discount and you won't have extra credits.



FREQUENTLY ASKED QUESTIONS

Is tuning safe?

-Absolutely, in many ways it is safer than factory tuning because we are logging and dialing in the tune for your exact fuel and situation.

Why BMP?

-I have over 5 years of hands-on tuning experience on a variety of platforms, I started with Ford EcoBoost which is one of the most challenging platforms to master. I then put my focus on Jeep. I have taken nearly every single available tuning course I can get my hands on and I continue to learn new things as things come along. I am a former Mopar technician and a former Jeep dealer service manager. I still do a ton of side work repairing and maintaining vehicles and have a deep understanding of all things automotive. My full time job is as a police officer, with over 13 years of service. As such, I pride myself on a high level of integrity, doing what is right, thorough and quick communication, and attention to detail. I am not just sending everyone cookie cutter email tunes. Every single customer I tune for gets a fully custom and dialed in experience made just for their Jeep.

Will tuning void my factory warranty?

-No. Dealers can't tell with a computer that you've been tuned, I verified this with my own WiTech (dealer scan tool). You can always flash your stock tune back on at any time prior to warranty work if you're concerned about it. P1400 DTC for Aftermarket Calibration is disabled in my files if that error pops up after your ECU install.

If you have a warranty repair the dealer would have to prove the tuning was the cause. If your PCM itself fails, that is the only circumstance where a warranty repair could possibly be denied because HP Tuners may leave a sticker on your unlocked ECU. ECU failure is rare and new units can be had for under \$200.

Will my tune be lost if the dealer updates my software?

-If they update your PCM or TCM, then yes. Let me know if this happens and I will apply your existing tune changes to your new OS free of charge.



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Can I purchase a spare PCM to swap?

-Yes, but go through a mopar parts dealer. Make sure your old and new PCM have the same exact software programmed on to them BEFORE sending one of them out for unlocking at HP Tuners.

I have a check engine light after installing my unlocked PCM, is this normal?

-Completely normal, clear DTCs with VCM Scanner and the CEL will go off, if not, some codes will remain displayed until 2-4 drive cycles are completed.

My engine is running funny on first start up with the unlocked PCM, what happened?

-Fairly common on GPEC2A models, simply disconnect both negative cables from your battery terminal, let the Jeep sit 5-10 minutes, then reconnect.

Will I pass emissions/inspection?

-EGR and emissions related parameters are left stock, you should not have any issues. You can always flash back to stock for a few weeks before your inspection if you are concerned about it.

Can I come in person for tuning?

-Yes, you will need to arrive with your already unlocked PCM, I do not offer PCM unlocking.

Can I change my tire size and gear ratio without getting a new tune?

-Yes, this can be done with your MPVI4 using VCM Scanner at any time.

Do I need a wideband to do custom tuning?

-No, my calibrations were dialed in with a wideband during development and there is no need for a wideband to tune stock or bolt on stock vehicles. A wideband is only needed for tuning advanced builds, IE forced induction, ported heads, etc. Advanced build support is available at an extra cost and will only be supported if you have a wideband set up.



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Why do I have to pay HP Tuners for credits after already purchasing a device and unlock from them?

-HPT employs dozens of engineers that spend a lot of time and money in development for multiple makes and models, the credit system is how HP Tuners recoups their expense.

Do I have to buy credits every time I want to change a tune?

-No, credits are a one-time purchase that are attached to your MPVI and vehicle.

WHAT DOES A CUSTOM TUNE DO?

Tuning recalibrates the engine and transmission, working within safe limits. Various things are modified; VVT/VVL operation, cam timing, torque management, spark timing, wide open throttle behavior, auto stop start management, cooling fan operation, upshift and downshift scheduling, shift feel, and much more. It is common to have 100-200 things changed within the software to get your Jeep to run the way I want it to run.

The end result is a Jeep with more usable power below 3000 RPM, a smoother powerband, a flatter torque curve, better shifting, less bogging, more refinement, and more. 6MT models will be much more enjoyable to use. 8At models will have the RPM right where you want it at all times – downshifts come much easier, upshifts are where they should be. On models with the infamous “stutter” or misfire feeling at low load low RPM (3-4 shift around 2000 RPM on automatic models, multiple other places this is felt on 6MT models), this issue is completely fixed with my tuning. Your Jeep will drive the way it should have from the factory when tuned. In addition to all the above benefits, with BMP you get a custom experience with an emphasis on speedy customer service. Your Jeep will be logged after getting tuned. This log is reviewed to ensure your Jeep is running as safely and as healthy as possible. If I see data within the log that I want changed, I will send you revisions until I am happy with the data. BMP Calibrations often fix things that your stock tune was falling short on.

Power and torque increase can be anywhere from 10-40 across the RPM range depending on fuel quality, environment, and other factors. All tuned Jeeps will feel dramatically better than stock regardless of octane fuel, but 91 octane or higher is recommended for the best end result. You will be happy regardless!



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STEP 1.1 - BMP CALIBRATIONS TUNE PURCHASE

Purchase my tune services using the links below. You can pay me later before actually tuning if you'd like as well.

Trans Only Tune for 8 Speed Auto Owners - \$300

<https://www.paypal.com/ncp/payment/7WYK8NQ6J6G5J>

6 Speed Models - Complete Engine Tune - \$350

<https://www.paypal.com/ncp/payment/4G48PECNZL492>

Automatic Models - Complete Engine and Transmission Tune - \$450

<https://www.paypal.com/ncp/payment/V2CAFGS6FD3DS>

STEP 1.2 – PURCHASES FROM HPTUNERS.COM

*****There are other companies than can unlock GPEC2A controllers, eventually the GPEC5 will be supported by others as well. Google search “GPEC2A/GPEC5 unlock service near me” to find someone closer, you don’t have to use HP Tuners for ECU unlock. This could potentially save you time and money*****

*****If coming in person for tuning, you do not need your own MPVI4 and access cable as we can use mine, saving you \$500, but you will still need to have your PCM unlocked. I still recommend purchasing and using your own MPVI4 and access cable, because if you ever want to return to stock or change something, you’ll be able to without coming back to me*******

1. Go to www.hptuners.com.
2. Create an account (free) and login to it.
3. Add an MPVI4 (\$400), along with the number of credits you need (see page 1 of this guide), to your cart.

- Credits are \$50 each, this is a one-time purchase per vehicle tuned, meaning, once you flash your credits to your VIN, you can tune and flash with your MPVI4 as much as you want.
- 4 credits are needed for GPEC5 PCMS (connectors on the top of the PCM),



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- 2 credits are needed for GPEC2A models (connectors on the side of the PCM)
- 4 additional credits are needed for TCM on automatic models.

4. Add a Dodge Smart Access Cable for 2018+ models (\$89) to your cart

-If you already have a SGW bypass cable from JScan or Tazer, you can skip this.

5. Add PCM Unlock Service to your cart (skip if you're only tuning TCM)

GPEC5 - <https://www.hptuners.com/product/dodge-pcm-service-gpec5/>

GPEC2A – <https://www.hptuners.com/product/dodge-pcm-services/>

-For GPEC2A users, combining this with a new MPVI4 and 6 credits will make your PCM service FREE. Sorry GPEC5 users have to pay full price.

-Discount should be applied at check out automatically for GPEC2A, saving you \$250.

-You will click the “Upgrade” option in the drop down box for GPEC2A.

-No need to buy additional PCM, clone PCM, or upload HPT file, just buy the service by itself and ship your existing PCM.

STEP 2: PCM REMOVAL FOR SHIPPING TO HP TUNERS

1. Disconnect negative battery terminals for both aux and main battery (on top of negative post on main battery, unbolt each line separately and isolate.
2. Your PCM is located next to your windshield washer fluid on the driver’s side under the hood. Make sure the area is free of dirt, debris, etc before removing PCM connectors. Connectors on top means you have a GPEC5, connectors on side means you have a GPEC2A.
3. Carefully remove PCM connectors, there are two, there is a push button to release the large lever, once released the lever pulls back and helps the connector separate from the PCM.
4. Remove the bolts holding the PCM in, should be 4 10MM bolts.
5. Keep track of where the ground strap, if any, were located, they must be installed when going back in.

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6. Package PCM and ship to HP Tuners

-Form should have been included in order email, but if not, print one and fill it out to place in box with your PCM. Form can be found at <https://files.hptuners.com/pub/2024/10/Dodge-PCM-Upgrade-Service-Shipping-Form-v3.pdf>

-Now, wait for HP Tuners to send your unlocked PCM back to you, this typically takes 5-7 business days, but sometimes longer and sometimes as fast as 3-4 if you overnight UPS or are close to Illinois. I recommend UPS.

STEP 3: PCM AND ACCESS CABLE INSTALL WHEN BACK FROM UNLOCK

1. Install PCM reverse order of removal, be sure battery is still disconnected, don't forget any ground straps! Be careful not to bend the pins
2. Install access cable or Tazer or SGW bypass, here is a guide -

<https://files.hptuners.com/pub/2025/05/2018-Dodge-Smart-Access-Cable-Instructions-v1.pdf>

3. Install negative battery cables again, a spark is normal.

STEP 4: FIRST START UP AND READ



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*HP Tuners recommends using a battery tender set to 12.5 volts or more for reading and programming your ECU, I have tuned hundreds of vehicles without a battery tender without issue so long as you have at least 12.0 volts. Up to you on if you want to use one or not, just know that if voltage gets too low, you could brick an ECU

**You may notice a check engine light on first start up, don't worry about it! It'll go away, the multiple codes are all related to the ECU being disconnected.*

1. Grab your PC, MPVI4, and included USB-C cable.
2. Go back to hptuners.com and download the LATEST BETA, install it.
3. Open VCM Scanner (yellow lightning bolt icon)
4. Plug your MPVI4 into your OBD2 port, then plug your USB-C cable into it and your PC. If you don't have a USB-C port on your PC, make sure you use a quality adaptor or other traditional USB cord.
5. Turn your key to the "ON" position without starting (two pushes on the button with foot off the brake, all dash lights should come on)
6. Click the blue vehicle icon to "Connect to Vehicle"
7. Click the orange check engine light for "Diagnostics and Info"
8. Read DTCs, various codes relating to throttle body and other circuits is normal.
9. Clear DTCs. Some may remain as "permanent" but they will go away eventually with some drive cycles if they don't clear right away. This is NOT AN ISSUE. Nothing is wrong with your Jeep and this happens on nearly every one.
10. Start engine and ensure CEL is off, if it is on, you may still have DTCs displayed as permanent or pending, this is normal!! It should clear with drive cycles or after we flash your new tune.
11. Turn Engine Off
12. Close VCM Scanner and open VCM Editor (Grey wrench icon).



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13. With Key On but the Engine Off, Click the “Read Vehicle” button (Black with green arrow).
14. Click “Gather Info”, it will determine what PCM and TCM you have
 - If your OS is newer and not defined by HP Tuners, these boxes will be empty or blank, if this is the case you just have to manually select your PCM and TCM. Scroll and find Stellantis GPEC2A or GPEC5 as needed. For TCM, select Dodge ZF8HP2.
15. Click “Read”.
16. When the Read is done, **SAVE THAT FILE!!!! THIS IS YOUR STOCK/AS FOUND READ.** You can flash back to stock at any time with this file if you chose to do so.
17. Email me that .HPT read file. I will build your tune from that.

STEP 5: FLASHING THE NEW TUNE

****Again, ensure your battery is healthy, battery tender is recommended but not absolutely required during flash/read process****

Follow these steps to write a tune back to the vehicle:

1. Plug the interface cable into the vehicle's OBD-II port. Connect the other end to your PC's USB port.
2. Open VCM Editor. Open the tune file I sent you.
3. Select Write Vehicle from the Flash menu.

NOTE: The first time you attempt to write to each vehicle, you will be prompted to purchase a license for that vehicle, if already purchased credits, you apply them at this time..

4. Turn the vehicle ignition to the ON (or RUN) position, but do not start the engine.
5. Make sure the doors are closed and all accessories are turned off. CAUTION: Do not use any vehicle accessories, including the door locking mechanism, during reading or writing procedures.



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6. Wait 10 to 15 seconds.
7. Make sure 'write calibration' is selected for both the PCM and TCM if you're an automatic. Then hit the Write button.
8. Follow the prompts on the screen. Don't worry about the voltage message unless your under 12.0 volts.

DATALOGGING INSTRUCTIONS

After plugging into your vehicle and opening VCM Scanner, click the blue car button to 'connect to vehicle', go to the Channels tab (on the left) and click the folder icon to open a channel configuration. Open the configuration file I provided you via email.

After the config is loaded, click 'vehicle' at the top menu, then click 'Repoll for for Supported Parameters'. This will ensure all data I need gathered populates. If a bunch of channels are missing or you had BLANK boxes in VCM Editor when you did your read, reach out to me and I will assist with getting logging working. If I can't get it working, we will make a trouble ticket with HP Tuners. You are safe to drive on my base tune file without logging.

-With the engine on, hit the red record button. While recording, go for a 5-10 minute drive, I need at least 1 wide open throttle pull, as well as mixed city driving. Drive with a variety of aggressiveness and use the whole range of the pedal and engine to get various loads and areas within the tune. -Hit the save button up top when done. Send me that file you just saved.

Rinse and repeat until I say it looks good. If you want things like throttle response, fan control, stop start changed, or anything else, let me know when sending your log.

If you have any questions or issues, please reach out to me.