

L5P TUNING INSTRUCTIONS







Thank you for purchasing a Motor Ops L5P Tuning Package.

The entire process may take a couple of hours; please make sure that you have thoroughly read through the instructions before moving forward.

YOU WILL NEED INTERNET ACCESS FOR THE ENTIRE PROCESS.

YOU MUST COMPLETE THE TUNING PROCESS BEFORE PERFORMING ANY MODIFICATIONS TO YOUR VEHICLE

Warning: Failure to disable the Air Filter Life System on 2020+ trucks prior to performing the ECM swap process will cause a warning light that can only be reset by a GM Dealer. Please see the "Disabling the Air Filter Life system" Document for step-by-step instructions

BEFORE REMOVING YOUR FACTORY ECM

1. Download **AND** install the latest <u>VCM Suite Beta</u> available at www.hptuners.com/downloads

2. Plug your MPVI2 into your laptop and then connect your MPVI2 to the vehicle's OBD2 port with the **STOCK** ECM still installed. Turn truck's key to "ON" position. For models equipped with a push button start, press and HOLD the start button for 10 seconds or until it lights up green. Do not press the brake while doing this!

3. Open VCM Scanner on your laptop

4. Select the icon that says "Connect to Vehicle" on the navigation bar





5. Select the "Controls & Special Functions" button

🕖 VCM Scanner - Connected: 2019 Chevrolet Silverado 2500 Work	Truck/LS/Fleet/Base, 6.6 L, V8, 1GC1KUEY2KF165715					- a ×
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d [®] Engine RPM (SAE)		80 180 📲 🔍 🎬	T Fuel Trim	15		
Vehicle Speed (SAE)	MAE ⁶⁰ rpm	60 km/h 200 er 19	T Fuel Trim	20 25		
<pre>Engine coolant Temp (SAE)</pre>			02 (mv)	30		
A Intake Air Temp (SAE)				35		
A Mass Airflow (SAE)	2 k2 P	20 240 ° ° ° °		0 45		
Intake Manifold Absolute Pr		0 260 10 0 0		30		
C Timing Advance (SAE)	MAP 19 RPM	Speed IAT 7		e 55 5 60		
Accelerator Position D (SAE)	KR Advance TPS INLB1 02.B1	0282 INTR2 TTB1 STB1 STB2 TTB2		S 65		
C Throttle Position (SAE)				a 75		
2 Relative Throttle Position				08 19		
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22 Equivalence Ratio Commanded		10 +0.0 +0.0		¥ 95		
2 02 Voltage B1S1 (SAE)				9 100		
2 O2 Voltage B251 (SAE)	2 .20 .5			Ē		
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2 WB EQ RATIO 5 (SAE) (2)				٢		>
次? Fuel System #1 Status (SAE)	Chart vs. Time					×
🔀 Short Term Fuel Trim Bank 1	HPM (rpm) INJ Duty (%)					6,000 260 100
🔀 Long Term Fuel Trim Bank 1						3 000 130 50
🔅 Short Term Fuel Trim Bank 2	Speed (km/h)					
🔆 Long Term Fuel Trim Bank 2	MAE (+>) 02 (+>)					0 0 0
(\$ Fuel Processo (SAF)						
Fuel Pressure (SAE)	MAP (HPA)					230 52.5 500
Cuel Lovel Toput (CAE)						
22 Ethanol Fuel % (SAE)	KR (*) TPS (%)					0 0.0 0
Control Module Voltage (SAE)						5 22.5 50
Concrot House Concy	Spark (*)					
🔆 Absolute Load (SAE)	INJ B1 (ms) INJ B2 (ms)					0 00 0 25.0 1,000 25.0 1,000
	03.8191/e40 03.8391/e40					12.5 500 12.5 500
📌 Ambient Air Temp (SAE)						
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	STET 01 (%) STET 02 (%)					0 0 0 0
Channels Details						-25-25-25-25

Created: Duration: Zoom: Time:

6. Select the Systems Tab





7. Click "Replace ECM" To start the function

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annels	P Gauge		X Gra	ph			
a- 🛃 🎕			Spark	Advance •	+ - A L C M W	Engine Speed (rpm) [Sensor] / 1000
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Engine RPM (SAE)			190 C	uel Trim	15		
vehicle speed (SAE)	MAF # 12 rpm	5 60 km/h	200 ECT 200	uel Trim	20 25		
Engine Coolant Temp (SAE)				mv)	0 30 0 30		
Intake Air Temp (SAE)	to at a	cial Functions	~		- 40		
Mass Airflow (SAE)	20 kPa P0 Engine	Transmission	System		0 45		
Intake Manifold Absolute Pr		General			30 30 30 30 30 30 30 30 30 30 30 30 30		
Timing Advance (SAE)	Change VIN				e 55 60		
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Throttle Position (SAE)					a 75		
Relative Throttle Position	Replace TCN	4			80		
Commanded Throttle Actuator	6 -30				85 90		
Equivalence Ratio Commanded					¥ 95		
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O2 Voltage B251 (SAE)	2				2 105		
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WB EQ Ratio 5 (SAE) (2)					2		
Fuel System #1 Status (SAE)	Chart vs. Time						1.000 000 100
Short Term Fuel Trim Bank 1	NEW ((pil) ING Day (%						6,000 200 100
Long Term Fuel Trim Bank 1	Status:						3 000 130 50
Short Term Fuel Trim Bank 2	Speed (kmm)						
Long Term Fuel Trim Bank 2							0 0 0
	MAP (gis) U2 (mV)						460 105.0 1,000
Fuel Pressure (SAE)							230 52 5 500
Fuel Rall Pressure (SAE)	(KAP (KP3)						
Fuer Level Input (SAE)							0 00 0
Ethanol Fuel % (SAE)	NH() TPS(%)						10 45.0 100
Control Module voltage (SAE)	Spark (*)						5 22.5 50
Absolute Load (SAE)	NJ B1 (ms) INJ B2 (ms)						0 0.0 0
Barometric Pressure (SAE)	02 81S1 (mV) 02 82S1 (mV)						
Ambient Air Temp (SAE)							
	LTFT BI (%) LTFT B2 (%)						25 25 25 25
	STFT B1 (%) STFT B2 (%)						
Channels Details							

8. It will again ask you if the stock ECM is installed. Click Yes.





9. ECM Data Read Successfully. Click okay. You may now replace the stock ECM with your provided unlocked ECM. **DO NOT CLOSE THE VCM SCANNER PROGRAM AND DO NOT DISCONNECT THE MPVI2 FROM YOUR COMPUTER OR FROM THE VEHICLE.** Turn your Key to the off position prior to disconnecting your factory ECM.

10. Your ECM is located on the driver-side of the vehicle next to your battery. There are three ECM harnesses that will need to be disconnected. There is also a 10 mm bolt that secures the ECM to the tray that it is held in. That 10 mm bolt will need to be removed. Once you have swapped the ECM you can proceed to step 11.

11. On VCM Scanner reconnect to the Vehicle





12. Select the "Controls & Special Functions"

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annels	A Gauge	X Graph		
• 🛃 🎕		Soark Advance		Engine Speed (rpm) [Sensor] / 1000
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Engine RPM (SAE)		100 160 160 100 III IT Fuel Trim	15	
vehicle speed (SAE)		60 km/h 200 5T Fuel Trim	20 25	
Engine coolant Temp (SAE)		40 220 - 220	30	
Intake Air Temp (SAE)			35	
Mass Airflow (SAE)	1 kPa 1 kPa	20 240 10 10 10	45	
Intake Manifold Absolute Pr		0 260 9 0	¥ 50	
Timing Advance (SAE)	RPM	Speed June 7	<u>ଅ</u> 55	
	MAP		60	
Accelerator Position D (SAE)	KR Advance TPS INJ B1 02 B1 02	282 INJ 82 LT 81 ST 81 ST 82 LT 82	2 70	
Throttle Position (SAE)	10 45 -100 -25 -1	1 25 25 25	75	
Relative Throttle Position	-8 -80 -20	-20	80	
Commanded Throttle Actuator			85	
	-5 +60 +15	P15 Log Log	90 0 05	
Equivalence Ratio Commanded	4 16 40 10	-10	9 100	
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WB EQ Ratio 1 (SAE) (2)			Σ	
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Fuel System #1 Status (SAE)	RFM (rpm) INJ Duty (%)			6,000 260 100
SHOFL TERM FUEL TRIM BARK 1				
Cong Term Fuel Trim Bank 1	Speed (km/h)			3,030 130 50
Long Torm Fuel Trim Bank 2				
	MAF (als) 02 (mV)			460 105 0 1 000
Euel Pressure (SAE)				
Fuel Rail Pressure (SAE)	MAP (kPa)			230 52.5 500
Fuel Level Toput (SAE)				
Ethanol Fuel % (SAE)	18(A) TES(A)			0 0.0 0
Control Module voltage (SAE)	Spark (*)			5 22.5 50
Absolute Load (SAE)	INJ B1 (==) INJ B2 (ma)			0 00 0 25.0 1.000 25.0 1
Barometric Pressure (SAE)	O2 B1S1 (mV) O2 B2S1 (mV)			12.5 500 12.5 9
Ambient Air Temp (SAE)				
	LIFT B1 (%) LIFT B2 (%)			2 X X X
	STFT B1 (%) STFT B2 (%)			
Channels D Date 24				

13. Select the "Systems" Tab





14. Click "Replace ECM" To start the function.

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े. 📓 🎕			Spark Advance	+-ALCMW	Engine Speed (rpm) [Sen	sor] / 1000
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🖗 Engine RPM (SAE)	N N		180 180 180 180 180 180 180 180 180 180	15		
vehicle speed (SAE)	MAF 2 rpm	60 km/h	200 BCT ST Fuel Trim	20 25		
Engine Coolant Temp (SAE)		ial Exerctions	02 (mv)	0 30 0 25		
🕈 Intake Air Temp (SAE)	a to at a	del Functions	^	~ 40		
Mass Airflow (SAE)	20 kPa 40 Engine	Transmission	System	Q 45		
🕫 Intake Manifold Absolute Pr		General		30 30 30 30 30 30 30 30 30 30 30 30 30		
Timing Advance (SAE)	MAP 18 Change VIN			0 55 60		
Accelerator Position D (SAE)	KR Advance TP: Replace ECM			0 65		
Throttle Position (SAE)	10 45			75		
Relative Throttle Position	Replace TCM			80		
Commanded Throttle Actuator	6 -30			85		
Requivalence Ratio Commanded				¥ 95		
2 02 Voltage B151 (SAE)	- 15			9 100		
02 Voltage B2S1 (SAE)	2			E 105		
WB EQ Ratio 1 (SAE) (2)				Σ		
WB EQ Ratio 5 (SAE) (2)				۲.		
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Short Term Fuel Trim Bank 1	RPM (rpm) INJ Duty (%					6,000 260 100
Long Term Fuel Trim Bank 1	Status					1 000 120 50
Short Term Fuel Trim Bank 2	Speed (km/h)					
Long Term Fuel Trim Bank 2						0 0 0
	MAF (gis) O2 (mV)					460 105.0 1,000
Fuel Pressure (SAE)	M40 (00)					230 52.5 500
Fuel Kall Pressure (SAE)						
<pre>Pref Level input (SAE) P Ethanol Fuel % (SAE)</pre>						0 00 0
Control Module Voltage (SAE)	Spark (*)					5 22.5 50
Absolute Load (SAE)	INJ B1 (mp) INJ B2 (mp)					0 0.0 0
Barometric Pressure (SAE)	O2 B1S1 (mV) O2 B2S1 (mV)					12.5 500 12.5 50
- Constant Att (SME)						00 0 00 0
	LTFT B1 (%) LTFT B2 (%)					25 25 25 25
	STFT BT(%) STFT B2(%)					

15. It will again ask you if the stock ECM is installed. This time select "NO"



VCM Scanner - Connected: 2019 Chevrolet Silverado 2500 Wi	ork Truck/LS/Fleet/Base, 6.6 L, V8, TGC TKUEY2KF165/15							- A
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Engine coolant Temp (SAE)			02 (mv)	0 30				
Intake Air Temp (SAE)	Controls and S	pecial Functions	X	33				
A Mass Airflow (SAE)	20 kPa 40 Eng	ine Transmission	System	45				
📌 Intake Manifold Absolute Pr		General		× 50				
🔅 Timing Advance (SAE)	114 Mar 115	au		P 55				_
	MAP Charge v							
Accelerator Position D (SAE)	KR Advance TPS Replace E	ICM .		2 70				
C? Throttle Position (SAE)	10 - 45 Services 7	CM .		0 75				
2? Relative Throttle Position	-8	UM LIFE		80				
Commanded Throttle Actuator	-30	into	~	85				
	.6			90				_
<pre>2? Equivalence Ratio Commanded</pre>	4	is the stock ECM installed in the	e vehicle?	0 100			-	
22 02 Voltage B1S1 (SAE)				£ 105				
C2 02 Voltage B2S1 (SAE)		Yes	No	E				
WB EQ Ratio 1 (SAE) (2)				Σ				
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Se Fuel System #1 Status (SAE)	EIPM (rgm) INJ Duty (%						6,000	260 100
21 Short Term Fuel Trim Bank 1								
22 Chart Tarm Fuel Trim Bank 2	Speed (kmh) Status: Requesting	acknowledgment from user						130 50
S2 Long Term Fuel Trim Park 2								
Co Long Term Poet IT In Dank 2	MAF (g/s) O2 (mV)						460 10	105.0 1.000
Suel Pressure (SAE)								
Fuel Rail Pressure (SAE)	MAP (kPa)						230 50	
Fuel Level Input (SAE)								
22 Ethanol Fuel % (SAE)	KR (*) TPS (%)						0 0	0 0 50 100
<pre>control Module Voltage (SAE)</pre>	Spark (*)							2.5 50
2 Absolute Load (SAE)	NUT (m) NUT (m)						0 00	0 0
	ind brights) into the (may							
📌 Barometric Pressure (SAE)	02 8191 (=)0 02 8291 (=)0							
📌 Ambient Air Temp (SAE)	G2 0131 (IIIV) G2 0231 (IIIV)							
							0.0.0	0 00 0
	LIFT B1 (%) LIFT B2 (%)							
								0 0
	SIFT B1(A) SIFT B2(A)							
🕑 Channels 📑 Details							-25-25	5-25-25

16. It will ask you if you have installed the new/replacement ECM; select "Yes".

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vertice speed (sk) vertice speed (sk	🕫 Engine RPM (SAE)			180 🔍 🔍 💿 🕬 📰 🛄 LT Fuel Trim	15		
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21 Throatle Position (SA) Image: COM Image: COM <t< td=""><td>Accelerator Position D (SAE)</td><td>KR Advance TPS Replace ECN</td><td>4</td><td></td><td>8 65 70</td><td></td><td>+ + + + + + - + - + - + - + - + - + - +</td></t<>	Accelerator Position D (SAE)	KR Advance TPS Replace ECN	4		8 65 70		+ + + + + + - + - + - + - + - + - + - +
2 Relative through ending the remaindement (CP) 3 Commanded Introl is Actual Commanded Introl International Internatinternate International International International Int	Throttle Position (SAE)	- 10 45 Replace TCh	4 Info		0 75		
2 Constrained Wrottle Actuator 2 Constrained Wr	Relative Throttle Position	-8	a mio	^	80 80		
2 guivalence Ratio Comminded 0 2 voitage Blai (64) 0 2 voitage Blai (64) 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Commanded Throttle Actuator	-30	Have you installed the new/replac	rement ECM7	0 85		
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2 Sing Sing Sing Sing Sing Sing Sing Sing	2 02 Voltage BISI (SAE)	2	Yes	No	2 105		
2 Best 60 Ratio 5 (SAL) (2) Carton Since Carton Sinc	WB EO Ratio 1 (SAE) (2)						
2 Fuel System #1 Status (SAE) Cart cs. line Support #1 Status (SAE) Support #1 Status (SAE	WB EQ Ratio 5 (SAE) (2)						
2 Control Notice Load (SAL) Control Notice Control Not							
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g door trans fuel trans and 2 Auf (pr) C(200) g loop trans fuel trans and 2 Muf (pr) C(200) g loop trans fuel trans and 2 Muf (pr) C(200) g loop trans fuel trans and 2 Muf (pr) C(200) g loop trans fuel trans and 2 Muf (pr) C(200) g loop trans fuel trans and 2 Muf (pr) C(200) g loop trans fuel trans f	Long Term Fuel Trim Bank 1	Status: Requesting ad	sknowledgment from user				3,000 130 50
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Pieł Rail Pressure (SAL) MU2 (M) 00 00 00 00 00 Pieł Rail Pressure (SAL) 0 00 00 0 00 00 0 00 00 Pieł Rail Pressure (SAL) 00 00 0 00 00 0 00 00 Pieł Rail Pressure (SAL) 00 00 0 00 00 0 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 Pieł Rail Pressure (SAL) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Eugl Prossure (SAE)						
<pre> full ture input (SAL) introduction (S</pre>	Fuel Rail Pressure (SAE)	MAP (kPa)					230 52 5 500
2 Ethanol Fuel % (SAE) Net of 175(%) Net of 175(%) 4 Control Nodule voltage (SAE) Spek () 22550 2 Absolute Load (SAL) NU Binso NU Binso 6100 4 Barometric Pressure (SAE) 00 Binso(M) 00 Binso(M) 4 Absolute Load (SAL) 00 Binso(M) 00 Binso(M)	Fuel Level Input (SAE)						
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© control Wodule voltage (SAE) Spat(1) 22500 © shorbute Load (SAE) NUE (ma) 26000 © anometric Pressure (SAE) 02 BIS (m) 02 BIS (m) 02 BIS (m) © abrient Air Teep (SAE) 02 BIS (m) 02 BIS (m) 02 BIS (m)							
2 Absolute Load (SAL) 53 kit (sm) 64 kit (sm) 69 c 4 Barometric Préssure (SAL) 02 8151 (m) 02 8251 (m) 02 8151 (m)	Control Module Voltage (SAE)	Spark (*)					5 22.5 50
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	Absolute Load (SAE)	INJ B1 (ms) INJ B2 (ms)					25.0 1,000 25.0 1,00
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andrent Air Teilp (SAE)	Barometric Pressure (SAE)	O2 B1S1 (mV) O2 B2S1 (mV)					12.5 500 12.5 500
	Ambteric Atr. Temp (SAE)						
LIFEB (%) LIFEB (%) 28 28 28		LTFT B1 (%) LTFT B2 (%)					28 25 25 25
STFT B1 (%) STFT B2 (%)		STFT B1 (%) STFT B2 (%)					

17. The ECM Replacement is now Complete.

18. If you have not yet installed your unlocked TCM, now is a good time to do so. The new unlocked TCM will require a driving relearn process after flashing. **DO NOT** tow or drive the vehicle erratically before doing the TCM relearn process. The complete TCM relearn process can be found on the last step of these instructions.

