

● Fuel

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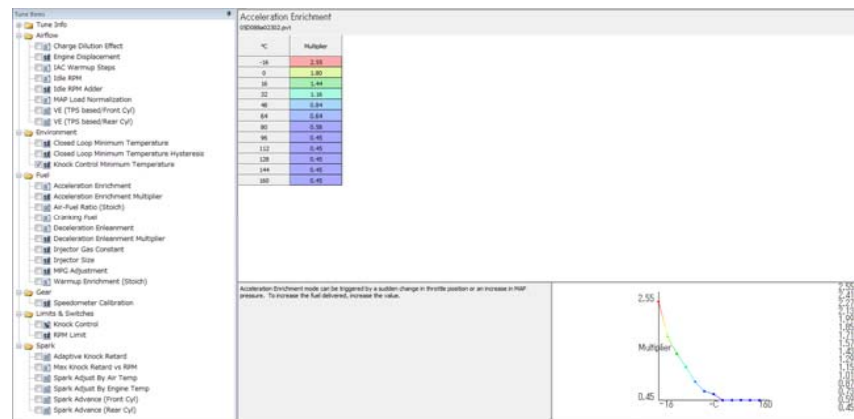
## 12 Acceleration Enrichment

Acceleration Enrichment mode can be triggered by a sudden change in throttle position or an increase in MAP pressure. To increase the fuel delivered, increase the value.

### 加速増量補正

加速増量は急激なスロットル変化やマニフォールド圧力の変化に対して作動する。

燃料噴射量を増やす場合は数値を大きくする。



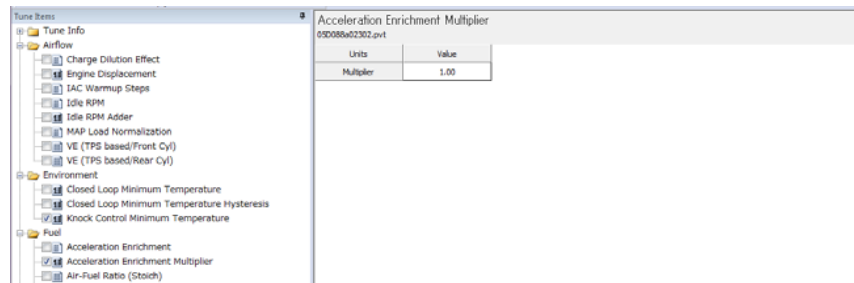
## 13 Acceleration Enrichment Multiplier

This is the fuel multiplier Acceleration enrichment will use to determine the total amount of fuel to add during rapid changes in acceleration. To "globally" increase the amount of fuel added during acceleration increase this value. To reduce the amount of fuel delivered decrease this value.

### 加速増量補正係数

加速時、加速増量に掛けられる係数。数値を上げると、加速増量が全体的に上がる。

加速増量を全体的に減らす場合はこの値を小さくする。





- Cranking Fuel
- Deceleration Enrichment
- Deceleration Enrichment Multiplier
- Injector Gas Constant
- Injector Size
- MPG Adjustment
- Warmup Enrichment (Stoich)
- Gear**
  - Speedometer Calibration
- Limits & Switches**
  - Knock Control
  - RPM Limit
- Spark**
  - Adaptive Knock Retard
  - Max Knock Retard vs RPM
  - Spark Adjust By Air Temp
  - Spark Adjust By Engine Temp
  - Spark Advance (Front Cyl)
  - Spark Advance (Rear Cyl)

Ready

This is the fuel multiplier. Acceleration enrichment will use to determine the total amount of fuel to add during rapid changes in acceleration. To "globally" increase the amount of fuel added during acceleration increase this value. To reduce the amount of fuel delivered decrease this value.

### 14 Air-Fuel Ratio (Stoich)

The main Air-Fuel table directly controls fuel delivered to the engine. Values at or near the stoichiometric ratio for gasoline (14.64:1) will yield the best fuel economy. Lower values will result in a richer condition, which is required for higher load / higher RPM ranges. The preferred values for best power and torque are between 12.6 and 13.4 depending on the engine combination. Using a value of 14.6 also enables the ECM's ability to maintain closed loop fuel control.

#### AFR (ストイキ)

メインAFテーブル。

ストイキ (14.64:1) 付近の値では最も燃費がよく、小さな数値は濃い状態で、高負荷高回転で要求される。

ベストパワー、トルクを求める場合、エンジンコンディションにもよるが、12.6-13.4の値が好まれる。

14.6付近の数値エリアでは、クローズドループ (フィードバック) が作用する。

Tune Item

- Tune Info
- Airflow**
  - Charge Dilution Effect
  - Engine Displacement
  - IAC Warmup Steps
  - Idle RPM
  - Idle RPM Adder
  - MAP Load Normalization
  - VE (TPS based/Front Cyl)
  - VE (TPS based/Rear Cyl)
- Environment**
  - Closed Loop Minimum Temperature
  - Closed Loop Minimum Temperature Hysteresis
  - Knock Control Minimum Temperature
- Fuel**
  - Acceleration Enrichment
  - Acceleration Enrichment Multiplier
  - Air-Fuel Ratio (Stoich)
  - Cranking Fuel
  - Deceleration Enrichment
  - Deceleration Enrichment Multiplier
  - Injector Gas Constant
  - Injector Size
  - MPG Adjustment
  - Warmup Enrichment (Stoich)
- Gear**
  - Speedometer Calibration
- Limits & Switches**
  - Knock Control
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- Spark**
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  - Spark Advance (Front Cyl)
  - Spark Advance (Rear Cyl)

Ready

**Air-Fuel Ratio (Stoich)**

RPM	MAP (kPa)									
	20	30	40	50	60	70	80	90	100	110
750	13.4	13.9	13.9	13.9	13.7	13.7	13.4	13.0	13.0	13.0
1000	13.4	13.9	13.9	13.9	13.7	13.7	13.4	13.0	13.0	13.0
1250	13.7	13.9	13.9	13.9	14.3	14.4	13.7	13.0	13.0	13.0
1500	13.7	14.3	14.3	14.3	14.3	14.3	13.6	13.0	13.0	13.0
1750	13.7	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
2000	13.7	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
2250	13.7	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
2500	13.7	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
2750	13.3	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
3000	13.0	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
3250	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
3500	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
3750	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
4000	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
4250	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
4500	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
4750	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
5000	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
5250	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
5500	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
5750	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
6000	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
6250	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
6500	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
6750	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0
7000	12.6	14.3	14.3	14.3	14.3	14.3	13.4	13.0	13.0	13.0

The main Air-Fuel table directly controls fuel delivered to the engine. Values at or near the stoichiometric ratio for gasoline (14.64:1) will yield the best fuel economy. Lower values will result in a richer condition, which is required for higher load / higher RPM ranges. The preferred values for best power and torque are between 12.6 and 13.4 depending on the engine combination. Using a value of 14.6 also enables the ECM's ability to maintain closed loop fuel control.

MAP (kPa) vs RPM

### 15 Cranking Fuel

Cranking fuel is a multiplier based on engine temperature. A larger number will supply more fuel during the cranking cycle. A smaller number will reduce the amount of cranking fuel during the cranking cycle.

#### 始動時噴射時間 (msec)

始動時噴射時間はエンジン温度に基づく。クランキング時、大きな値は燃料噴射が多く、数値を減らせば噴射量が減る。

Tune Item

- Tune Info
- Airflow**
  - Charge Dilution Effect
  - Engine Displacement
  - IAC Warmup Steps
  - Idle RPM
  - Idle RPM Adder
  - MAP Load Normalization
  - VE (TPS based/Front Cyl)
  - VE (TPS based/Rear Cyl)
- Environment**
  - Closed Loop Minimum Temperature
  - Closed Loop Minimum Temperature Hysteresis
  - Knock Control Minimum Temperature
- Fuel**
  - Acceleration Enrichment
  - Acceleration Enrichment Multiplier
  - Air-Fuel Ratio (Stoich)
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  - Injector Gas Constant
  - Injector Size
  - MPG Adjustment
  - Warmup Enrichment (Stoich)
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  - Speedometer Calibration
- Limits & Switches**
  - Knock Control
  - RPM Limit
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  - Spark Advance (Rear Cyl)

Ready

**Cranking Fuel**

°C	Milliseconds
-25	45.1
0	33.5
25	26.1
50	20.7
75	16.4
100	12.8
125	11.7
150	9.5
175	14.3
200	14.3
225	14.3
250	14.3

Cranking fuel is a multiplier based on engine temperature. A larger number will supply more fuel during the cranking cycle. A smaller number will reduce the amount of cranking fuel during the cranking cycle.

Milliseconds vs Temperature

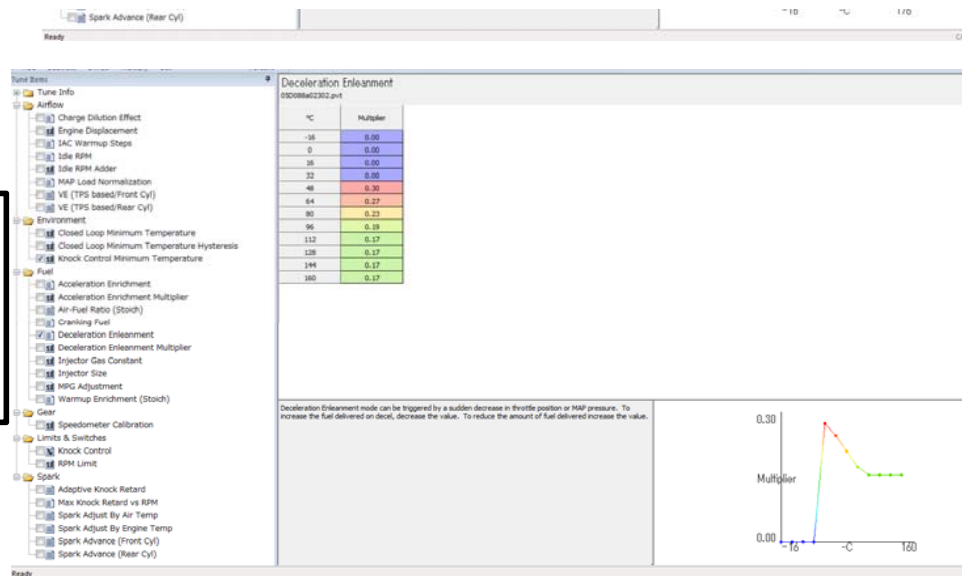
## 16 Deceleration Enleanment

Deceleration Enleanment mode can be triggered by a sudden decrease in throttle position or MAP pressure. To increase the fuel delivered on decel, decrease the value. To reduce the amount of fuel delivered increase the value.

### 減速補正

減速増量は急激なスロットル変化やマニフォールド圧力の負の変化に対して作動する。

減速時、燃料噴射量を増やす場合は数値を小さくし、燃料噴射を減らす場合は数値を大きくする。

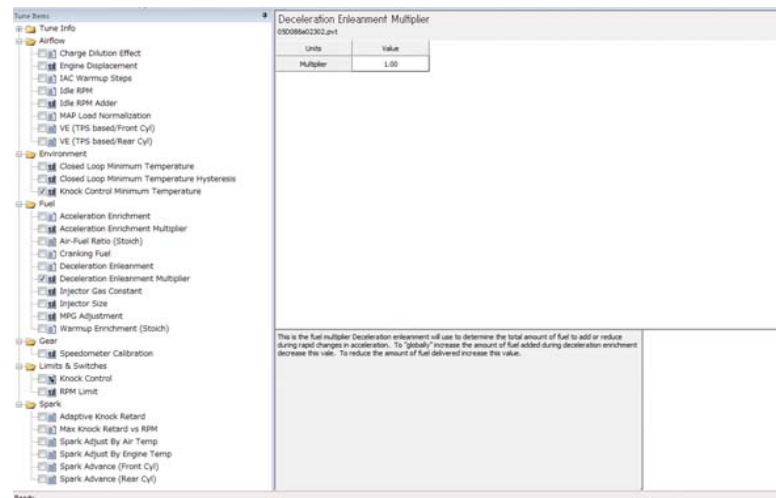


## 17 Deceleration Enleanment Multiplier

This is the fuel multiplier Deceleration enleanment will use to determine the total amount of fuel to add or reduce during rapid changes in acceleration. To "globally" increase the amount of fuel added during deceleration enrichment decrease this vale. To reduce the amount of fuel delivered increase this value.

### 減速補正係数

減速補正係数は、減速時の燃料噴射を減量させる。この値を大きくする減速時の全噴射量が減量される。燃料噴射量を減らす場合はこの値を大きくする。

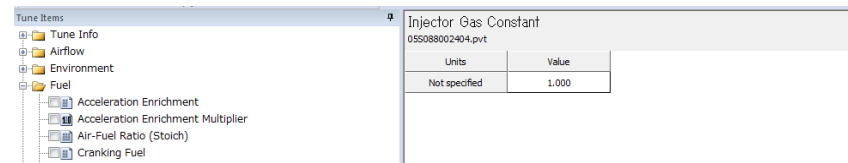


## 18 Injector Gas Const

This is a constant used internally for fuel delivery calculations. It is not advised to change this value.

### インジェクターガス定数

アの定数は内部演算に用いられる。アの値は変更し、ないアを推奨する。



この値はエンジン調整に利用される。この値は変更しないことが推奨される。

- Deceleration Enleanment
- Deceleration Enleanment Multiplier
- Injector Gas Constant
- Injector Size
- MPG Adjustment
- PE Air-Fuel Ratio (Stoich)
- Warmup Enrichment (Stoich)
- Gear
- Limits & Switches
- Spark

This is a constant used internally for fuel delivery calculations. It is not advised to change this value.

## 19 Injector Size

Injector flow base values in grams per second. This value will need to be changed for larger injectors.  
 1 gram per second = 7.94 pounds per hour.  
 1 lbm/hr = 0.126 gm/sec  
 Example: injectors that are 4.35gr/sec are 34.5lbm/hr.  
 Multiply (4.35\*7.94=34.5).  
 Example2: Injectors that are 42 lbm/hr are 5.29 gm/sec.  
 Multiply( 42 \* 0.126 = 5.29).

### インジェクタ係数

インジェクターフロー (g/sec)

大きなインジェクターに交換した場合はこの値を変更する。

1[g/hr]=0.126[g/sec]

例1: 4.35g/sec]=34.5[lbm/hr]

- インジェクター計算  
ガソリン比重

0.75 g/cc

入力数値、[cc/min]換算

**4.22 g/sec**  
**337.6 cc/min**

The screenshot shows the 'Tune Items' tree on the left with 'Injector Size' selected. The right-hand pane displays the 'Injector Size' configuration for file 09D088a02302.pvt. A table shows the unit 'Grams/Second' with a value of '4.22'. Below the table, there is explanatory text: 'Injector flow base values in grams per second. This value will need to be changed for larger injectors. 1 gram per second = 7.94 pounds per hour. 1 lbm/hr = 0.126 gm/sec. Example: injectors that are 4.35gr/sec are 34.5lbm/hr. Multiply (4.35\*7.94=34.5). Example2: Injectors that are 42 lbm/hr are 5.29 gm/sec. Multiply( 42 \* 0.126 = 5.29).' The status bar at the bottom indicates 'Ready'.

## 20 MPG Adjustment

This adjusts the MPG readout for the bike. Higher values show a higher MPG, lower values show lower.

MPG ?

Mile Per Galon??燃費??

The screenshot shows the 'Tune Items' tree on the left with 'MPG Adjustment' selected. The right-hand pane displays the 'MPG Adjustment' configuration for file 09D088a02302.pvt. A table shows the unit 'Not specified' with a value of '1999'. The status bar at the bottom indicates 'Ready'.



Warmup Enrichment (Stoich)

Gear

- Speedometer Calibration
- Limits & Switches
  - Knock Control
  - RPM Limit
- Spark
  - Adaptive Knock Retard
  - Max Knock Retard vs RPM
  - Spark Adjust By Air Temp
  - Spark Adjust By Engine Temp
  - Spark Advance (Front Cyl)
  - Spark Advance (Rear Cyl)

Ready

This adjusts the MPG readout for the bike. Higher values show a higher MPG, lower values show lower.

## 21 PE Air-Fuel Ratio (Stoich)

Power Enrichment mode is active at higher RPMs and when the throttle position is greater than 95 percent. The purpose of PE mode is to operate the engine at maximum torque AFR and spark values for a short time, then adjust to more conservative values to reduce engine temperature.

パワー空燃比（当量比）  
出力AFRモードは、高回転、スロットル開度95%以上で作動する。  
PEモードの目的は、エンジンの最大トルクが得られるAFRとし、急速燃焼、さらに数値を上げれば燃料冷却によりエンジン温度を下げられる。

Tune Item: PE Air-Fuel Ratio (Stoich)

555088002404.pvt

Seconds	AFR (Stoich)
0.0	14.800
2.0	14.800
4.1	14.800
6.2	14.800
8.3	14.800
10.4	14.800
12.4	14.800
14.5	14.800
16.6	14.800
18.7	14.800
20.7	14.800
22.8	14.800
24.9	14.800
26.9	14.800
29.0	14.800
31.1	14.800
33.1	14.800

Power Enrichment mode is active at higher RPMs and when the throttle position is greater than 95 percent. The purpose of PE mode is to operate the engine at maximum torque AFR and spark values for a short time, then adjust to more conservative values to reduce engine temperature.

## 22 Warmup Enrichment (Stoich)

The warm up enrichment table adds additional fuel after start up. The fuel from this table decays out over time, and it is only active for 20 to 30 seconds. The table is activated only once per key-on. If the engine stalls and is restarted without cycle in the ignition, enrichment continues from its value when the stall occurred.

暖機増量  
暖機増量は、エンジン始動後の燃料増量を与える。時間により減衰し20-30秒後にだけ作用する。  
キーONにした時に有効となり、もしエンジンストール後に再度INGオンしないで、リスタートした場合、ストール時の補正値が継続される。

Tune Item: Warmup Enrichment (Stoich)

55008802300.pvt

°C	Ratio
-16	4.4
0	4.0
36	3.4
72	2.4
48	2.4
64	2.4
80	2.4
96	2.4
112	3.0
128	3.9
144	4.3
160	4.8

The warm-up enrichment table adds additional fuel after start up. The fuel from this table decays out over time, and it is only active for 20 to 30 seconds. The table is activated only once per key-on. If the engine stalls and is restarted without cycle in the ignition, enrichment continues from its value when the stall occurred.

## 23 Closed Loop Lamda Range

This is the Min and Max range of Lambda the ECM uses when operating in closed loop. A value above 1.01 will allow the ECM to learn a leaner range for closed loop. A value lower than .98 will allow the ECM to operate at a richer range for closed loop.

クローズドループλレンジ

クローズドループ（フィードバック）時の最大／最小ラムダ値の指定。

λ=1.01以上でLEAN

λ=0.98以下でRICHと判定

### ●AF計算

ストイキ 14.7

λ	AFR	Φ当量比
<b>1.013</b>	<b>14.891</b>	<b>0.9872</b>
<b>0.976</b>	<b>14.347</b>	<b>1.0246</b>

The screenshot shows a software configuration window titled "Closed Loop Lambda Range". On the left is a tree view of engine parameters. The main area contains a table with two columns: "Not specified" and "1.013". Below the table, there is a vertical scale with markers at 1.013, "Not specified", and 0.976. A text box at the bottom of the window contains the same explanatory text as seen in the first image: "This is the Min and Max range of Lambda the ECM uses when operating in closed loop. A value above 1.01 will allow the ECM to learn a leaner range for closed loop. A value lower than .98 will allow the ECM to operate at a richer range for closed loop."