

# VERSION3.4 SOFTWARE MANUAL INDEX

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[Ignition]

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# [Parameter Setting]

- Basic
- Voltage
- •Fuel 1
- •Fuel 2
- •Ignition 1
- Ignition 2
- •Twin Injector

# ■ Initial Setting

	Base Engine Type	1JZ-GTE	•	A/F1	I	No Selection	No Selection • A/F2	No Selection - A/F2 No Selection
Crank Signal Type	TOYOTA1	<ul> <li>Cam Signal Type</li> </ul>	TOYOTA1 +	Air Flow		No Selection	No Selection 👻	No Selection 👻
Number of Cylinders	6 🗸	Displacement	2500 [mL]	Water Temp.		TOYOTA1	TOYOTA1 🗸	TOYOTA1 -
				Intake Air Temp.		No Selection	No Selection 👻 Intake Air Pressure	No Selection
	lume Measurement	Intake Air Pressure 👻		Fuel Temp.		No Selection	No Selection - Fuel Pressure	No Selection
rFlow Type	OFF	<ul> <li>AirFlow Axis Max. Value</li> </ul>	100ps Range 👻	Oil Temp.		No Selection	No Selection	No Selection
lumber of Injection	3	Main Injector Volume	500 [mL/min]	Exhaust Temp.		No Selection	No Selection 👻	No Selection 👻
Number of Ignition	6	RPM Axis Max. Value	8000 rpm -	Other Temp. 1		No Selection	No Selection - Other Pressure 1	No Selection
Pressure Range 0	0.20 – 2.70 [x100kPa]		00 - 11.00	Other Temp. 2		No Selection	No Selection	No Selection
						🗸 ок	VOK X CANCEL	V OK X CANCEL

Enter or select necessary items for the initial setting and conversion table setting. Basically, when the base engine is selected, Numbers for "Crank Signal Type", "Number of Injection" and "Number of Ignition" are entered automatically. If number(s) should be changed, enter a proper value here.

#### \* Important Points \*

- For setting of NB8C, [BP-ZE] should be selected as a base engine, but, select [NB#C] for the crank signal type instead of [MITSUBISHI].
- If a number of the ignition and/or ignition is changed from the stock specification, change the number under this initial setting. E.g. Change the number of injection to 6 from 3, change the number of ignition to 4 from 1.
- Calculate the injector volume considering the fuel pressure using the formula shown below:

- Reviews Evel Processor × Injection Volume = Input Value

Previous Fuel Pressure

Enter the value obtained from this formula to "Main Injector Volume."

#### e.g.)

When using a 550cc injector, and changing the fuel pressure to 3.5kgf/cm2 to 2.5kgf/cm2.

$$\sqrt{\frac{3.5}{2.5}}$$
 × 550 = approx. 650

Enter "650" to "Main Injector Volume."

For the pressure range setting, enter the target max boost pressure + 0.2K as the setting range. The main trim map (charging efficiency map) will made properly within the setting range (Target boost press. + 0.2K).

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Para	meter	Setting
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Basic Crankshaft/Camshaft	Throttle/Accel							
Input Setting     Voltage     Throttle/Accel     Pressure	Throttle Parameter 1-1 PIN 20         CLOSE         395 [mV] GET         OPEN         3588 [mV] GET           0.0 [%]         0.0 [%]         100.0 [%]         100.0 [%]         100.0 [%]							

After the initial setting, input the throttle position sensor's voltage value in Parameter Setting 1; then, the throttle parameter value is entered as shown above.

For a vehicle equipped with the electronic control throttle, the voltage of "OPEN" may not be entered. In this case, input the appropriate value of the voltage, and perform setting of "OPEN" voltage referring to the log data during the vehicle setting.

# ■ Injection Dead Time Map

The following is the invalid injection time main map. Use a map according to the injector installed to the vehicle.

	0 6.0 7.0		9.0 10.0		2.0 13.0		15.0	16.0	17.0	18.0	19.0	
F1]Axis Setting	4000 3000	2000	1625 1250	1100 9	50 825	700	650	600	550	500	450	400
A [F2]Conversion Table A [F3]Fuel Control	P/N	Injector	Type	Resistance	Cor	inector		Injec	tor Dead	Time (	usec)	
A [F3] Fuel Map 1	P/N	Vol. (cc)	туре	Resistance	Shape	Color	8V	10V	12V	14V	16V	18V
A [F3]Fuel Map 2	1402-RN008	555	Side Feed	High	Round	Yellow	1795	1179	830	584	403	193
A [F3]Fuel Map 3	1402-RN009	740	Side Feed	High	Round	Red	1641	973	633	463	359	227
🐴 [F3] Fuel Cut 🛛 🕅 Standard Injection Time	1402-RN010	600	Top Feed	Low	Square	Purple	1508	853	598	402	227	135
🗗 [F4] A/F 🛛 🕅 🗺 Injection Time at Start	1402-RN011	480	Top Feed	High	Round	Purple	1972	1166	776	483	274	100
🞒 [F5] Ignition ( 📰 None Phase Injection Time	1402-RZ001	550	Top Feed	Low	Square	Purple	2364	1636	1273	909	545	545
🗗 [F5] Ignition M 🕅 Independent Injecton Time	1402-RZ002	680	Top Feed	Low	Square	Blue	2444	1704	1407	1111	815	815
☐ [F5]Ignition M 127 Main Injector Dead Time ☐ [F6]ISC BT Sub Injector Dead Time	1402-RA002	1000	Top Feed	Low	Round	Light Blue	2400	1800	1400	1100	1000	800
🗗 [F7] Boost 📰 Independent Injector Dead T 🛱 [F8] Valve Timi 🔡 Standard Injection Limins	im											
F9]Option Out 📰 Injection Timing S Twin Injector												

The invalid injection time map is consist of 3 maps; main, sub, and independent map. To use a main injector, input the value to "Standard Injection Time."

To use twin injectors (for FD3S), input the characteristics of second injector's invalid injection time to "Sub Injector Dead Time." To control the third injector by Independent Map like for RX-8, input the data to "Independent Injector Dead Time."

#### ■ Ignition Cut RPM Input

For a vehicle that CAT is NOT installed for a race, the RPM rev can be edited by entering RPM to Ignition Cut RPM.

\* Do not perform this setting for a vehicle equipped with CAT. Failure to do so may cause damage to the CAT.

Parameter Setting			18.7						
Basic Crankshaft/Camshaft		I	gnition 2						
<ul> <li>Input Setting</li> <li>Voltage</li> <li>Throttle/Accel</li> </ul>	Ignition Cut RPM Normal 20000 [rpm] Car Speed 20000 [rpm]								
<ul> <li>Pressure</li> <li>Others</li> <li>Switch</li> <li>Frequency</li> <li>A/F - Knock</li> <li>Output Setting</li> <li>Voltage</li> <li>Frequency</li> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Fuel</li> <li>Fuel</li> <li>Fuel 2</li> </ul>	Ignition Cut (SI Time RPM Trim Hold Knock Integrati Using I Start Knock I	over Speed Pulse Num 1 Trim 1 1 Time	ber 10 [Count] 0 [rpm] 0.0 [degree] 0 [msec]	To determine the max RPM by ignition cut, input the set RPM to Normal Ignition Cut RPM.					
Twin Injector	Option Trim	X Axis	Y Axis	Linked Condition					
Ignition 1	Option Trim 1	OFF •	OFF	▼ Permanent →					
▲ ISC	Option Trim 2	OFF •	OFF	▼ Permanent					
ISC Other Control	Option Trim 3	OFF •	OFF	▼ Permanent ▼					
- Anti-Lag Boost	Option Trim 4	OFF -	OFF	▼ Permanent ▼					
Naming Settings     Error     Memo     PRINT     Comparise	on Parameter	CONNECTOR 🛛 🏜 SEND P	ARAMETER	V OK X CANCEL					

Max RPM Setting by Fuel Cut          If Max RPM Setting by Fuel Cut         If Max Setting Cut         If Max Setting State Control (STate Control) (STate Control (STate Control) (STate Control (STate Control) (STate Contro	Port         1           Dot         2000         2000           Return         2000         2000           Parameter Setting         -         -           -         Cranishaft / Camshaft         -           1         -         -         -           2         -         Porticit Setting         -           -         -         Porticit         -           -         -         -         Porticit           -         -         -         -         -           -         -         -         -         -           -         -         -         -         -           -         -         -         -         -           -         -	2         3         4         5         6           0         2000         2000         2000         2000         2000           0         20000         20000         20000         20000         20000         20000           A/F Feedback Setting         A/F 1 Feedback I           A/F 2 Feedback Setting         A/F 1         155           Throttle Condition         900         70           Veat Temp. Low         7         1           Fuel Cut Condition Selection         0.0         70           Deceloration Cut         Car Speed Condition         0.0           Start Delay Time         500         500	Fuel 2	siency	<ul> <li>For the max setting by find check "RPM Cut Condition in Parameter shown in the Input the representation execute and cut.</li> </ul>	uel cut, " under Fuel on Selection er Setting e left. om to
/	[F3]Fuel Cut -	RPM Fuel Cut				<b>—</b>
E Deceleration Fuel Cut	Port 1	2 3	4 5	6	7 8	
2 RPM Fuel Cut	Cut 6950	7000 6950	7000 6950	7000	0 0	
	eturn 6800	6800 6800	6800 6800	6800	0 0	
♦ Air Flow Volume Fuel Cu						
⊗Air Flow Efficiency Fue						

- For the car with CAT, check "RPM" under Fuel Cut Condition Selection in Parameter Setting.
- The fuel cut RPM of each port is determined in RPM Fuel Cut Map.
- The setting above shows that there is 50rpm difference in RPM at 6950rpm and 7000rpm for each port. This setting prevents a sudden fuel cut. Also, this setting is suggested as one method to improve driving feeling.

■ Intake Air Pressure Fuel Cut

• Fail-safe function that a cut is executed for each port depending on the boost pressure can be setup like a factory ECU. Use this function as necessary. Under the setting shown above, a fuel cut is executed when the boost pressure exceeds 1.5kg, and when the boost pressure is reduced to 1.15kg, the fuel injection is resumed.

Mathematical     P	Port         1         2         3           Cut         1.80         1.82         1.83           Return         1.15         1.15         1.15		
🗗 [F3]Fuel Map 2 🐴 [F3]Fuel Map 3	Parameter Setting		X
🗗 [F3]Fuel Cut 🐴 [F4]A/F	Basic Crankshaft/Camshaft	Fuel	2
🗗 [F5] Ignition Control	Input Setting	A/F Feedback Setting	
🗗 [F5]Ignition Map 1 🐴 [F5]Ignition Map 2	Voltage	A/F1 Feedback Map OFF	-
	Throttle/Accel	A/F 2 Feedback Map OFF	
🗗 [F7] Boost	Others		
🐴 [F8] Valve Timing	Switch	Start Time 150 [sec]	Cycle Time 50 [msec]
🐴 [F9] Option Output	Frequency A/F - Knock	Throttle Condition 90.0 [%]	
	Output Setting	Water Temp. Low 70 [deg-C]	Water Temp. High 90 [deg-C]
🗺 Deceleration Fuel Cut	Voltage		
SRPM Fuel Cut	Frequency	Fuel Cut Condition Selection	
E Intake Air Pressure Fuel Cut	Switch (LSL1) Switch (LSL2)	RPM	🗹 Intake Air Pressure
Air Flow Efficiency Fuel Cut	Switch (LSH1)	Air Flow Volume	Air Flow Efficiency
	Switch (LSH2)	Deceleration Cut	
	Switch (HS)	Car Speed Condition 0.0 [km/h]	Return Trim Coefficient 0.0 [%]
	Fuel 1		
	Fuel 2	Start Delay Time 500 [msec]	
	I win Injector	t (T. Chift Fund Out Time 50 [mage]	
	▲ Ignition Ignition 1	A/T Shift Fuel Cut Time 50 [msec]	
	Ignition 2	Option Trim	
	▲ · ISC	X Axis	Y Axis Linked Condition
	ISC ▲ Other Control	Option Trim 1 OFF     OFF	✓ Permanent ✓
II II			n .

#### ■ A/F Meter Setting

For the A/F meter setting, select "External A/F1" to the voltage tab of Input Setting under Parameter Setting. Select a proper item for A/F Knock and Conversion Table

Setting.

Parameter Setting						A/F1	C	HKS	
Basic				Volt	age	Air Flow		HKS NEKO	
<ul> <li>Crankshaft/Camshaft</li> <li>Input Setting</li> </ul>	-Option Voltag	e Input [Type	e1]		-Option	Water Tem	p.	Horiba Rambda	[
Voltage Throttle/Accel	#1 PIN 14	Intake Air I	ressure		#9 PIN	Intake Air 1	Гemp.	SARD AFBOOST	
- Pressure Others	#2 PIN 21	AirFlow_1		•		Fuel Temp.		BRITZ No Selection	n
- Switch - Frequency				_	#10 PIN	Oil Temp.		No Selectio	n 🔻
A/F - Knock	#3 PIN 9	OFF		-		Exhaust Te	mp.	No Selectio	n 👻
Voltage	#4 PIN 15 Fuel GCC	External_A	/F1		#11 PIN	Other Tem	p. 1	No Selectio	n 🗸
Frequency	Fuer GCC					OLL		No Coloctio	R -
Parameter Setting								×	
Basic Crankshaft/Camshaft				A/F - K	(nock				ок
Input Setting	A/F-Knock								
- Voltage Throttle/Accel	A/F1		External	•	¶√F2		OFF		
- Pressure Others	Knock1		OFF	•	Knock2		OFF		
Switch					r . a		<b>r</b> .		
A/F - Knock	External A/F1 P	PIN 16	RICH	0 0.00	[mV]	LEAN	5000 [m <sup>1</sup> 100.00	L L	
Voltage Frequency Switch (LSL1)	External A/F2		RICH	0 00	[mV]	LEAN	5000 [m	V]	,

Before Starting Mapping: Troubleshooting

Engine does not start after cranking:

Check to see Data Monitor if the RPM is entered.

The RPM is entered when cranking is performed. If the RPM is not displayed, the engine does not start.

When the RPM is properly entered, the numerical value is displayed in "Fuel Main".

Also, "Ignition Main" should display the number of BTDC.

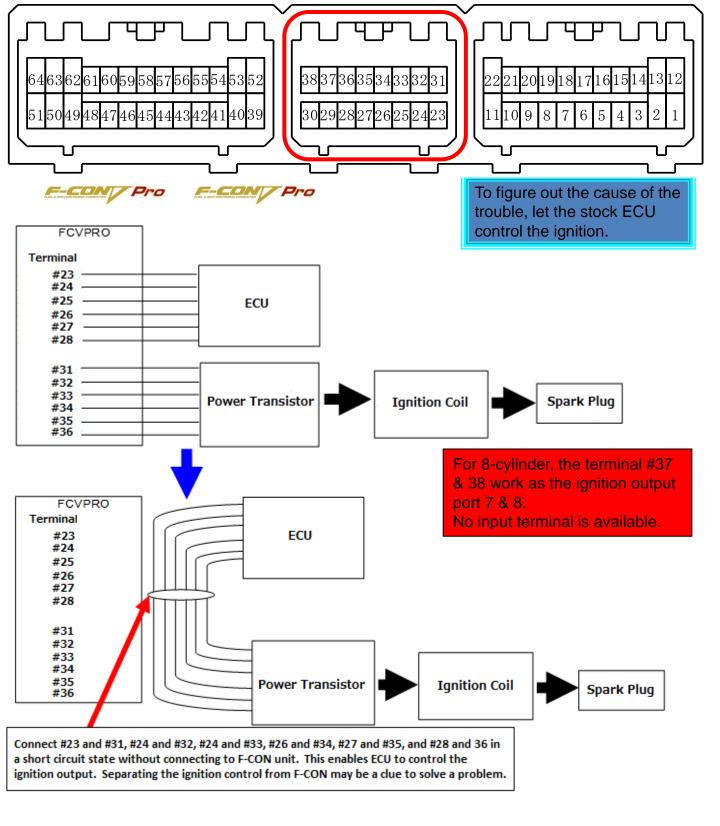
If the RPM is not entered, there may be a problem in a vehicle. Recheck the crank angle sensor, distributor, etc. Also, check the crank angle signal type of P/W.

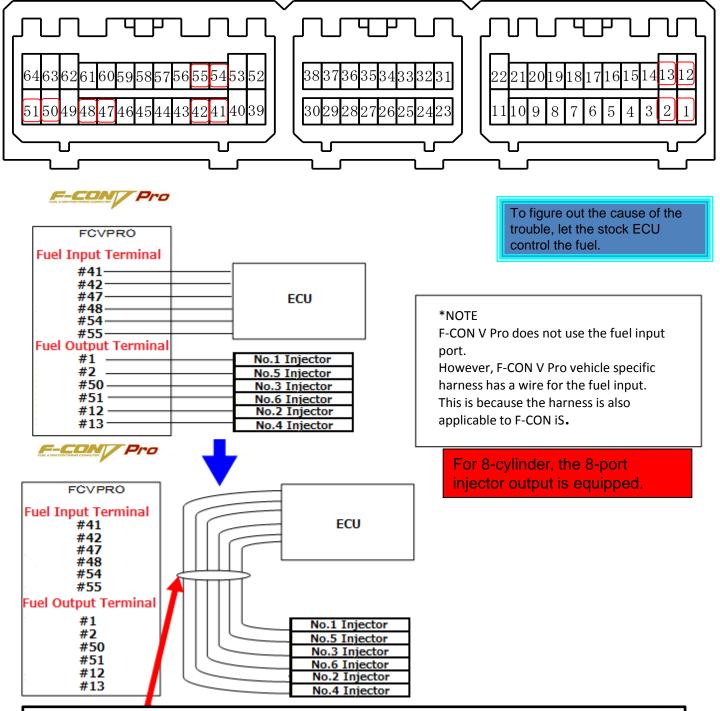
View Setting Font Size	3 -	Bold Font 🕅 A	utomatic	Widt
V Basic V Fuel	▼ Ignition	ISC	Valv	
	Ignition			
RPM			rpm	Fu
RPM_Movement			rpm	FL
Air_Flow_Volume			L/min	Ð
Air_Folw_Efficiency		0.000		A
Intake_Air_Pressure Intake Air Pressure Movement			kg/cm2 ka/cm2	Ci
Throttle Position	iit.	-1.00		W
<		0.0	70	vv
		0.0	%	
Injection_Main Injection Sub		0.0	%	(F
Injection_Sub Injection Independent		0.0		(F (F
Twin Injection Distribution		0.0		- (F
Target_A/F		14.00		- (F
Main Injector Dead Time			usec	- (F
Sub Injector Dead Time			USEC	- (F
<		012	usee	
Ignition_Main		0.0	degree	(1
Ignition Sub		0.0	-	(1
Main_Close_Angle_Time			degree	(1
Sub_Close_Angle_Time			degree	(1
Total Ignition Trim #1			degree	(i
Total Ignition Trim #2			degree	(1
Total Ignition Trim #3			degree	(1
Total_Ignition_Trim_#4			degree	) (I
Total_Ignition_Trim_#5			degree	) (I
Total_Ignition_Trim_#6		0.0	degree	Ì
Total_Ignition_Trim_#7		0.0	degree	(1
Total Ignition Trim #8		0.0	degree	(1
rotal_ignition_min_#o				
(I)Start_Ignition_Timing		0.0	degree	(I

Basic Crankshaft/Camshaft		Crankshaft/Camshaft									
<ul> <li>Input Setting</li> <li>Voltage</li> <li>Throttle/Accel</li> </ul>	NE Input	○ Magnetic ● Optical	G1 Input	○ Magnetic ◎ Optical	G2 Input	○ Magnetic ◎ Optical					
Pressure Others Switch	NE Pull-Up	○ ON ● OFF	G1 Pull-Up	○ ON ● OFF	G2 Pull-Up	○ ON ● OFF					
Frequency A/F - Knock Output Setting Voltage Frequency Switch (LSL1) Switch (LSL2) Switch (LSH1) Switch (LSH2)	NE Input Thre	eshold )0 [r/min]	G1 Input Thre	shold 10 [r/min]	G2 Input Threshold 500 [r/min]						
Switch (HS)	Determination	n Level									
	○ 1000mV	© 800mV	○ 600	mV <b>Q</b> 4	00mV	○ 200mV					
Fuel Fuel 1 Fuel 2 Twin Injector		000111	000								

■ Setting of Crankshaft & Camshaft

If the default settings of "Crank Cam" under Parameter Setting shown above are changed, the engine does not start. Make sure there is no change on Pull-up referring to this page.





Connect #41 and #1, #42 and #2, #47 and #50, #48 and #51, #54 and #12, and #55 and 13 in a short circuit state without connecting to F-CON unit. This enables ECU to control the fuel injection. Separating the fuel injection control from F-CON may be a clue to solve a problem.

# ■ MAP determined to be valid @ starting an engine "Fuel Map"

Injection Til	me at S	Start															
7Pm -NEW-	<b>P</b> [X]	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130
🐴 [F1] Axis Setting		1 123600		34600	23550	16800	14880	12840	10920	8880	6960	4920	4920	4920	4920	4920	4920
JEP21Conversion Table		2 123600		34600	23550	16800	14880	12840	10920	8880	6960	4920	4920	4920	4920	4920	4920
[F3]Fuel Control		3 123600 4 123600		34600 34600	23550 23550	16800 16800	14880 14880	12840 12840	10920 10920	8880 8880	6960 6960	4920 4920	4920 4920	4920 4920	4920 4920	4920 4920	4920 4920
🐴 [F3] Fuel Map 1	·	5 123600		34600	23550	16800	14000	12840	10920	8880	6960	4920	4920	4920	4320	4920	4920
🐴 [F3] Fuel Map 2		6 123600		34600	23550	16800	14880	12840	10920	8880	6960	4920	4920	4920	4920	4920	4920
🐴 [F3] Fuel Map 3		7 123600		34600	23550	16800	14880	12840	10920	8880	6960	4920	4920	4920	4920	4920	4920
🐴 [F3]Fuel Cut		8 123600	76000	34600	23550	16800	14880	12840	10920	8880	6960	4920	4920	4920	4920	4920	4920
🐴 [F4 🛲 [rs 🛛 🍘 Standard Injec																	
[F5] F Standard Injection Time     [F5] F Injection Time     [F5] F Injection Time     [F5] F Injection Time	e at Start ection inme																
Parameter Setting							-	-		× )							
Basic Crankshaft/Camshaft				Ba	asic												
Input Setting	Number of (	Cylinders	6 🗸		Displac	ement		2500	[mL]		Wh	en th	ne RF	PM ex	ceec	ls "(	Comple
– Voltage – Throttle/Accel	Crank Signa	al Type	TOYOTA1	•	Cam Si	gnal Type	9	TOYOT	'A1	-							•
Pressure     Others		Crank Signal Type TOYOTA1 Cam Signal Type TOYOTA1 Combustion Judgement RPM" of Basis under Parameter Setting															
Switch	Crank Offse	et Angle				0.0 [degree]					Basic under Parameter Setting, t						
Frequency	Crank Signa	al Sub Paramet	er			0					mode is changed to the standard						
A/F - Knock Output Setting					_					_				•	ntil th		
- Voltage	Type of Inta	ake Air Volume	Measurem	nent		Intake A	ir Pressu	re 👻									
<ul> <li>Frequency</li> <li>Switch (LSL1)</li> </ul>	Complete C	Combustion Jud	gement RP	РМ		500	[r/min]				exc	eeds	″ Co	omple	ete co	ombu	istion
- Switch (LSL2)	<u> </u>	liJudgement Ri	-				[r/min]										al moc
<ul> <li>Switch (LSH1)</li> <li>Switch (LSH2)</li> </ul>	Scramble T			[msec]	Power	Holding T	ime		0 [sec]								ove is
Switch (HS) ▲ Fuel	Standard P	ower Supply V	oltage			12000	[mV]		_						valio		
- Fuel 1											ueu	errin	ieu i		vanc		
- Fuel 2 Twin Injector	Fuel Cut Th	hrottle	2.0	[%]	Fuel Cu	nt Accel	Position	2	2.0 [%]								
▲ Ignition	Throttle Ta	ingent Calibrati	ion Sample	Time		50	[msec]										
Ignition 1 Ignition 2	A/T Shift U	Jp/Down Throt	tle Conditio	on		100.0	[%]										
▲ Other Control	Output Fun	nction 1				LSH 11,1	2 Enable	d	•								
– Anti-Lag – Boost	Output Fun	nction 2				LSH 1,2	Enabled		-								
Naming Settings																	

The initial injection time map is switched to the standard injection time map by "Complete combustion Judgement RPM" in the parameter shown above. Injection based on the number input to the initial injection time map is performed until 500rpm after cranking. For example, according to the map above, the simultaneous fuel injection by all cylinders is performed for "4920µsec" when the water temperature reaches to  $80^{\circ}$ C.

(In fact, the sum of the value input to Invalid Injection Time Map and Initial Injection Time Map is output.) There are some cases that the injection time of this map is too short to lead to the first combustion; therefore, a spark plug is fouled after several cranking. In this case, increase the number input to Initial Injection Time Map.

#### NOTE: The actual initial injection time is "Initial Injection Time + Invalid Injection Time"; therefore, proper Invalid Injection time must be input to Invalid Injection Time Map.

Parameter Setting

4920µsec

0		start at all, try some adjustn	nent	Basic Crankshaft/Camshaft	Fuel Control Type					
Map unde "7000 µse first inject	nge the first in er Parameter. ec" as shown tion is 7000µs	jection time in First Injection When the first injection tim in Parameter shown in the ec and second one is 4920 rature reaches 80°C.	<ul> <li>Joint Sectiong</li> <li>Voltage</li> <li>Throttle/Accel</li> <li>Pressure</li> <li>Others</li> <li>Switch</li> <li>Frequency</li> <li>A/F - Knock</li> <li>Output Setting</li> <li>Voltage</li> <li>Frequency</li> <li>Switch (LSI1)</li> <li>Switch (LSI1)</li> <li>Switch (LSI12)</li> </ul>	Port 1 Main x1 Port 2 Main x1 Port 2 Main x1 Port 3 Main x1 Port 5 Main x1 Port 5 Main x1 Port 5 Port 7 OFF Port 8 OFF Port 8 OFF Port 8 DFF Po		Fuel C 575 [mL/mini				
-		Engine R	PM	Fuel 1 Fuel 2 Twin Injector	First Injection Time Air Conditioner Trim	Frim Value	7000 [usec] 0.0 [%]			
•	1 <sup>st</sup> Iı	njection	2 <sup>nc</sup>	<sup>1</sup> Injectio	on					
Invalid Inj	ection Time	1st Injection Time	Invalid In	ection	Time					
						/				

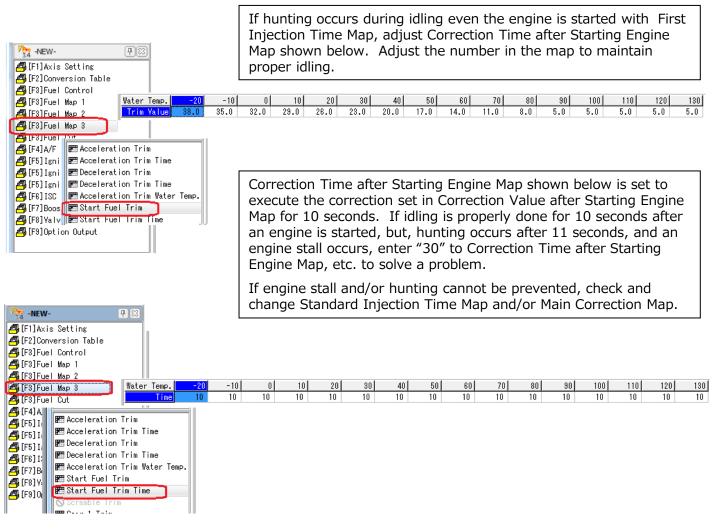
7000µsec

#### ■ Use of Start Fuel Trim Map / Start Fuel Trim Time Map

■ Start Fuel Trim Map / Start Fuel Trim Time Map

These maps are located in "Fuel Map 3" under Map item.

Make sure to perform settings for the stable idling.

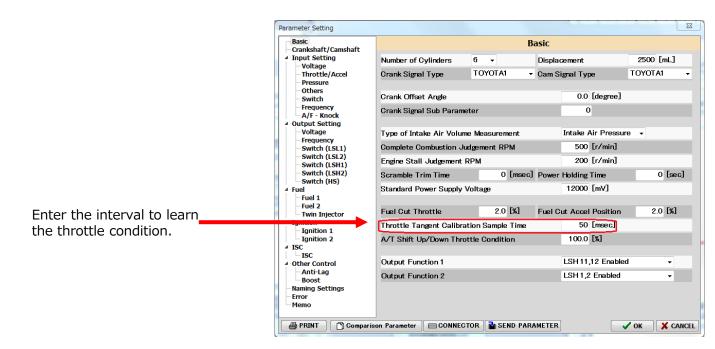


#### Setting Under Acceleration

To determine how much the fuel injection should be increased according to the throttle opening angle, the throttle condition is learned at the intervals of "Throttle Tangent Calibration Sample Time" of Basic under Parameter Setting.

This setting is the important part of the acceleration performance.

There are 2 maps to increase the fuel injection volume. One is Non Phase Injection Map is to avoid the lean spike. Under this map fuel is injected from all cylinders together for a designated period of time according to the throttle opening angle at one interval regardless of the injection time set to each cylinder. Another is Acceleration Trim Map is to increase the fuel injection volume to resolve the continued lean condition by adding fuel to each cylinder under phased injection.



■ Non Phase Injection Map The throttle opening angle change occurs during "Throttle Tangent Calibration Sample Time" under Parameter Setting is on a vertical axis of this map. One injection from all ports is carried out according to this map.

FillAxis Setting
 FillAxis Setting
 FillAxis Setting
 FillAxis Setting
 FillFuel Control
 FillFuel Map 1
 FillFuel Map 2

**P**[23]

Basic Grankshaft/Camshaft			Basic	2	
Input Setting Voltage	Number of Cylinders	6 🗸	Dis	placement	2500 [mL]
- Throttle/Accel - Pressure	Crank Signal Type	TOYOTA1	▼ Ca	m Signal Type	TOYOTA1
- Others - Switch	Crank Offset Angle			0.0 [degree]	
Frequency A/F - Knock	Crank Signal Sub Paran	neter		0	
Output Setting Voltage	Type of Intake Air Volu	me Measurement		Intake Air Press	ure 🗸
<ul> <li>Frequency</li> <li>Switch (LSL1)</li> </ul>	Complete Combustion	Judgement RPM		500 [r/min]	
- Switch (LSL2) - Switch (LSH1)	Engine Stall Judgement	RPM		200 [r/min]	
- Switch (LSH2)	Scramble Trim Time	0 [m	æc] Po	wer Holding Time	0 [sec
Fuel Fuel	Standard Power Supply	Voltage		12000 [mV]	
- Fuel 2 Twin Injector	Fuel Cut Throttle	2.0 [%]	Fu	el Cut Accel Position	2.0 [%]
Ignition Ignition 1	Throttle Tangent Calibr	ation Sample Tir	ne	50 [msec]	
Ignition 2	A/T Shift Up/Down Thr	ottle Condition		100.0 [%]	
- ISC ISC - Other Control	Output Function 1			LSH 11,12 Enable	ed 🗸
- Anti-Lag - Boost	Output Function 2			LSH 1,2 Enabled	•
- Naming Settings - Error - Memo					
🖨 PRINT 📄 Compa	rison Parameter 🛛 🖽 CONNE	CTOR 🎥 SEND	ARAME	TER	🗸 ОК 🛛 🗶 САЛ

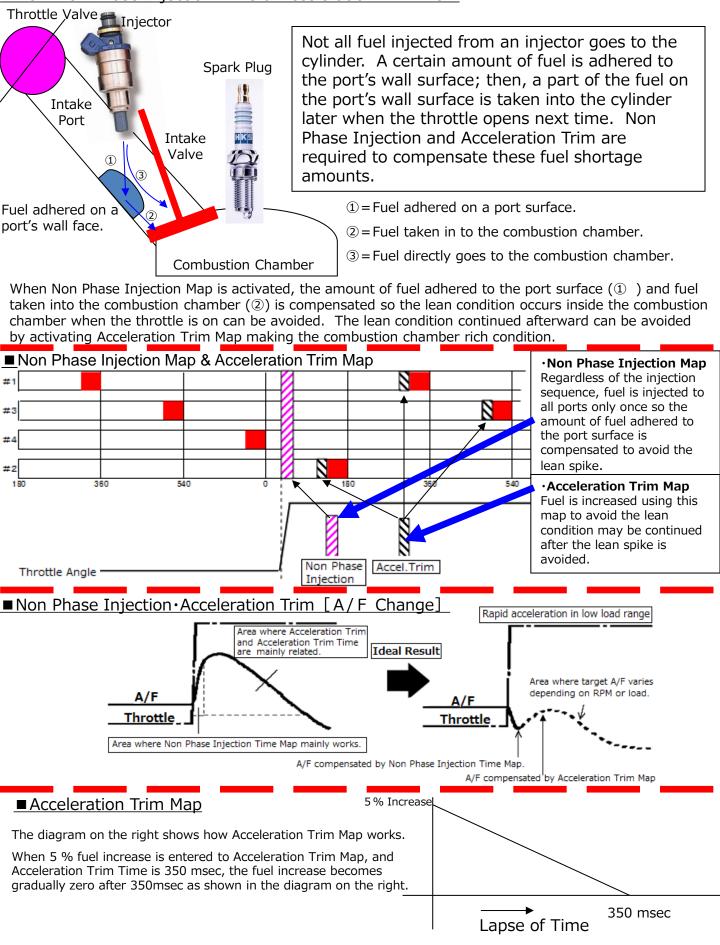
🛛 🖪 (F	3]Fuel Map 3																	
🖪 (F	3]Fuel Cut																	
- <b>1 🗗</b> (F			0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
- 🗗 🗗 (F	🖞 🌌 Standard Injection Time	2.0	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	📰 Injection Time at Start	5.0	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
🛛 🖪 (F	PM None Phase Injection Time	10.0	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
🐴 ( F	🖞 🌌 Independent Injecton Time	20.0	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
<b>A</b> F	🕂 🇺 Main Injector Dead Time	30.0	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
A F	g 📰 Sub Injector Dead Time	40.0	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
a F	📰 Independent Injector Dead Tii	50.0	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
	📰 Standard Injection Timing	60.0	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
	📰 Injection Timing																	
	STwin Injector																	

# ■ Acceleration Trim Map Acceleration Trim map is under Fuel Map 3. The period of acceleration trim is set under Acceleration Trim Time.

[F1]Axis Setting     [F2]Conversion Table     [F3]Fuel Control     [F3]Fuel Map 1     [F3]Fuel Map 2	₽ (2) 5.0 10.0 20.0 30.0 40.0	0 5.0 7.8 11.2 14.7 18.1	500 5.0 7.8 11.2 14.7 18.1	1000 5.0 7.8 11.2 14.7 18.1	1500 5.0 7.8 11.2 14.7 18.1	2000 5.0 6.0 7.8 11.2 14.7 18.1	2500 5.0 6.0 7.8 11.2 14.7 18.1	3000 5.0 6.0 7.8 11.2 14.7 18.1	3500 5.0 7.8 11.2 14.7 18.1	4000 5.0 6.0 7.8 11.2 14.7 18.1	4500 5.0 7.8 11.2 14.7 18.1	5000 5.0 7.8 11.2 14.7 18.1	5500 5.0 7.8 11.2 14.7 18.1	\$000 5.0 7.8 11.2 14.7 18.1	8500 5.0 6.0 7.8 11.2 14.7 18.1	7000 5.0 6.0 7.8 11.2 14.7 18.1	7500 5.0 6.0 7.8 11.2 14.7 18.1							
[F3]Fuel Map 3 [F3]Fuel Cut [F4]A/F [F5]Ignition Control [F5]Ignition Map 1	50.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0	21.6 25.0							
FBJInition Map 2 FBJISC FBJISC FBJValve Timing FBJValve Timing FBJOption Output	<ul> <li>[F1]</li> <li>[F2]</li> <li>[F3]</li> <li>[F3]</li> </ul>		ion Tab ntrol p 1		<del>9</del> 83																			
Acceleration Trim Received to a trim Received to trim Received to trim Received to a trim Received to		Fuel Cu	p 3 deratio deratio deratio deratio	on Trim on Irim on Trim on Trim	Time Time	RPM	0	280		400	1500 933	2000 700	250		000	3500 400	4000	4500 311	5000	5500 254	6000 233	6500 215	7000	7500 186

Activate Non Phase Injection Time map shown in the previous page to avoid the initial lean spike. To resolve the continued lean condition, use Acceleration Trim map. Set the period of the acceleration trim time using Acceleration Trim Time map shown above. For example, when Acceleration Trim Time is 200msec under 7000rpm, the acceleration trim gradually becomes zero at 200msec after the rpm reaches 7000rpm.

#### ■ How Non Phase Injection Time & Acceleration Trim Work



# ■ Standard Injection Timing Map

Basic					Fuel 1					
Crankshaft/Camshaft Input Setting	Fuel Cont	trol Type	,		Fu	el Group I	Distribut	ion		
Voltage	Por		in x1			Port 1				
<ul> <li>Throttle/Accel</li> <li>Pressure</li> </ul>	Por		in x1			Port 2			-	
- Others	Por		in x1	-		Port 3		1	-	
- Switch - Frequency			in x1			Port 4		1	-	
A/F - Knock		rt 5 OF	F	•		Port 5		1		
Output Setting Voltage	Por	rt 6 OF	F	-		Port 6	Group	1	•	
Frequency	Por	rt 7 OF	F	•		Port 7	Group	1		
- Switch (LSL1)	Por	nt 8 OF	F	· )		Port 8	Group	1		
– Switch (LSL2) – Switch (LSH1) – Switch (LSH2)	Injector Co	oefficien	t 1280	0000	Fue	l Coefficie	nt	1.00	0 [%]	
-Switch (HS)	Injector Vo	olume	Ma	in 5	500 [mL/n	nin]	Sub	•	0 [mL/	'min]
Fuel	First Inject	tion Tim	e		0 [usec]	]		_	_	
Twin Injector	Air Conditi	ioner Tri	im Trim Va	alue	0.0 [%]	Decre	ment Co	efficient	100	[%]
Ignition	Load 1 Tri	m	Trim Va	alue	0.0 [%]	Decre	ment Co	efficient	100	[%]
Ignition 1 Ignition 2	Load 2 Tri	m	Trim Va	alue	0.0 [%]	Decre	ment Co	efficient	100	[%]
- ISC	Load 3 Tri	m	Trim Va	alue	0.0 [%]	Decre	ment Co	efficient	100	[%]
Other Control	Load 4 Tri		T		0.0 [%]	Dooro	ment Co	ficient	100	[%]
		m	Trim Va	alue	0.0 [76]	Decre	ineric CO	enncienc		
Anti-Lag Boost Naming Settings Error Memo	Define Sub		OFF	alue	- ▼	Decre		emcienc	100	
Boost Naming Settings Error Memo	Define Sub	Map	OFF		T					
Boost Naming Settings Error Memo		Map		SEND	PARAMET	ER	[	√ ок		CANCEL
Boost Naming Settings Error Memo	Define Sub	Map	OFF	SEND	PARAMET	ER 4	5	<b>√ ок</b> 6	) <b>X</b> (	CANCEL
Boost Naming Settings Error Memo Memo PRINT Comparison Comparison A -NEW-	Define Sub	Map CC	OFF	2 0.0	PARAMET	ER 4 0.0	5	<b>√ ок</b> 6 0.0	7	CANCEL
- Boost - Naming Settings Error - Memo - M	Define Sub	Port1 Port2	OFF DNNECTOR 1 0.0 480.0	2 0.0 0.0	• • • • • • • • • • • • • •	ER 4 0.0 0.0	5 0.0 0.0	✓ ок 6 0.0 0.0	0.0 0.0	CANCEL 7 0. 0.
Boost Naming Settings Error Memo PRINT Compariso PRINT Compariso Comp	Define Sub	Port1 Port2 Port3	OFF DNNECTOR 0.0 480.0 240.0	2 0.0 0.0 0.0 0.0	• • • • • • • • • • • • • •	ER 4 0.0 0.0 0.0	5 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0	0.0 0.0	CANCEL 2 0. 0. 0.
Boost Naming Settings Error Memo PRINT A NEW- F[1]Axis Setting [F2]Conversion Table [F3]Fuel Control	Define Sub	Port1 Port2	OFF DNNECTOR 1 0.0 480.0	2 0.0 0.0	• • • • • • • • • • • • • •	ER 4 0.0 0.0	5 0.0 0.0	✓ ок 6 0.0 0.0	0.0 0.0	CANCEL 2 0. 0. 0.
PRINT Comparise PRINT	Define Sub	Port1 Port2 Port3 Port4	OFF DNNECTOR 0.0 480.0 240.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0	PARAMET 3 0.0 0.0 0.0 0.0 0.0	<b>ER</b> 4 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	CANCEL 7 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT [7] Axis Setting [F1] Axis Setting [F2] Conversion Table [F3] Fuel Control [F3] Fuel Map 1 [F3] Fuel Map 2	Define Sub	Port1 Port2 Port3 Port4 Port5	OFF 0.0 480.0 240.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0	PARAMET 3 0.0 0.0 0.0 0.0 0.0 0.0	ER 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6  0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	CANCEL 7 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Compariso [F1]Axis Setting [F2]Conversion Table [F3]Fuel Control [F3]Fuel Map 1 [F3]Fuel Map 2 [F3]Fuel Map 3 [F3]Fuel Cut	Define Sub	Port1 Port2 Port3 Port4 Port5 Port6	OFF DNNECTOR 0.0 480.0 240.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	PARAMET	ER 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Compariso [F1]Axis Setting [F2]Conversion Table [F3]Fuel Control [F3]Fuel Map 1 [F3]Fuel Map 2 [F3]Fuel Map 3 [F3]Fuel Cut	Define Sub	Port1 Port2 Port3 Port4 Port5 Port6 Port7 Port8	OFF 0NNECTOR 1 0.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Compariso Froj PRINT Compariso Froj PRINT Froj Prel Map 1 Froj Fuel Map 1 Froj Fuel Map 2 Froj Fuel Map 3 Froj Fuel Cut Froj Fuel Cut Froj Fuel Cut Froj Fuel Cut Froj Froj Ignition Control	Define Sub	Port1 Port2 Port3 Port4 Port6 Port6 Port8 Port8	OFF DNNECTOR 1 0.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 1 1 1 1 1 1 1 1 1 1 1 1 1	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Compariso Froj PRINT Compariso Froj PRINT Froj Prel Map 1 Froj Fuel Map 1 Froj Fuel Map 2 Froj Fuel Map 3 Froj Fuel Cut Froj Fuel Cut Froj Fuel Cut Froj Fuel Cut Froj Froj Ignition Control	Define Sub on Parameter P (2) Eff Stand Eff Injec	Port1 Port2 Port3 Port4 Port5 Port6 Port7 Port8	OFF 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.
Recost Naming Settings Error Memo PRUNT Comparison PRUNT Comparison Proventi Proventi Provention Provention Provention Proven	Define Sub on Parameter P (2) E Stand E Injec None	Port1 Port2 Port3 Port4 Port5 Port6 Port6 Port7 Port8 Jard Injetion Ti Phase J	OFF DNNECTOR 1 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Compariso Froj Fuel Compariso [F3]Fuel Control [F3]Fuel Map 1 [F3]Fuel Map 1 [F3]Fuel Map 2 [F3]Fuel Map 2 [F3]Fuel Map 3 [F3]Fuel Map 3 [F3]Fuel Map 3 [F3]Fuel Control [F5]Ignition Control [F5]Ignition Map 1 [F5]Ignition Map 2 [F6]ISC	Define Sub	Port1 Port2 Port3 Port4 Port5 Port6 Port7 Port8 Port7 Port8 dard Injetion Ti Phase I pendent	OFF 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Comparison PRINT Comparison PRINT Comparison PRINT Comparison PRINT Comparison PRINT PR	Define Sub on Parameter	Port1 Port2 Port3 Port5 Port6 Port6 Port7 Port8 Jard Inj tion Ti Phase I pendent Injecto	OFF DNNECTOR 1 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo PRINT Comparison PRINT Comparison PRINT Comparison PRINT Comparison PRINT Comparison PRINT PR	Define Sub on Parameter	Port1 Port2 Port3 Port5 Port6 Port6 Port7 Port8 Jard Inj tion Ti Phase I pendent Injecto	OFF 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMETI 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0.
Boost Naming Settings Error Memo	Define Sub on Parameter	Port1 Port2 Port3 Port4 Port6 Port6 Port7 Port8 dard Injector injector pendent	OFF DNNECTOR 1 0.0 480.0 240.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PARAMET 3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	✓ ок 6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	CANCEL 2 0. 0. 0. 0. 0. 0. 0. 0. 0.

Based on Fuel Control Type in Fuel 1 under Parameter Setting, enter values to Standard Injection Timing Map to determine the injection timing.

Standard Injection Timing is the compression top dead center angle of each port (cylinder) based on the crankshaft's angle (1 cycle=720°).

F-CON V Pro calculates the injection timing based on the values entered to Standard Injection Timing Map.

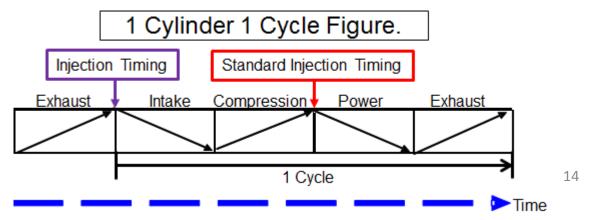
When to finish injection before each port reaches to TDC angle is determined by entering degrees to Injection Timing Map.

\*Diagram below shows the how Injection Timing works.

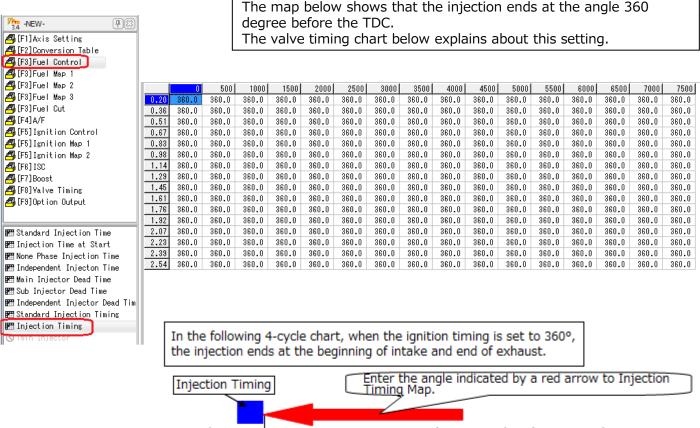
"Fuel Control Type" in Fuel 1

Select a fuel control type from "Main", "Sub", and "Independent" for each port in Fuel 1 under Parameter Setting.

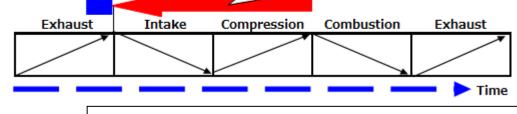
"Main x 1" is for the sequential injection which injects one time per cycle. "Main x 2" is for the simultaneous injection which injects twice per cycle. For a sub-injector, select "Sub x 1" for one injection per cycle, etc. Select "Independent" when additional injectors are installed so injection is controlled by a map besides main or sub injectors.



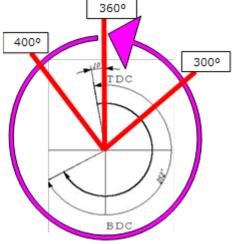
# ■ Injection Timing Map



determined.



In Injection Timing Map, the timing of the injection end can be



The angle set to Ignition Timing falls into the timing the valve overlap occurs. When the valve timing is changed due to replacement of camshafts or variable valve timing system, adjusting the injection timing according to the valve timing enables the injection to be ended at the timing considering the valve overlap.

The chart on the left side shows when the angle is set to 400°, the injection ends on an advanced side (to a leftward direction), and when the angle is set to 300°, the injection ends on a delay side (to a rightward direction).

#### Independent Injection Timing Map

When additional injectors are installed, injection is controlled by an independent map besides main or sub injectors.

			_			_		13	nap is
Parameter Setting	. A A	5.5.5							additio
Basic Crankshaft/Camshaft			F	uel 1				-	use this
Input Setting	Fuel Control	Туре		Fuel Gr	oup Distribu	tion		F	Fuel Co
- Voltage - Throttle/Accel	Port 1	Main x1 🗸			ort 1 Grou		-	F	Parame
- Pressure Others	Port 2	Main x1 +			ort 2 Grou		•	_	
- Switch	Port 3	Main x1 + Main x1 +			ort 3 Grou ort 4 Grou	•	•		The set
Frequency A/F - Knock	Port 4 Port 5	Main x1 + OFF +			ort 4 Grou ort 5 Grou		• •	"	Indepe
Output Setting	Port 6	OFF -			ort 6 Grou			i,	njectio
- Voltage - Frequency	Port 7	Independent x1 💂			ort 7 Grou	p1	<b>•</b>	t	ermina
- Switch (LSL1)	Port 8	Independent x 1 🗸		Р	ort 8 Grou	p1	<b>•</b>		orts ir
- Switch (LSL2) - Switch (LSH1)	Inin stars On affi	cient 12800000		Evel One	66 alaat	1.0	00 [%]		
- Switch (LSH2)	Injector Coeffi			Fuel Coe				<b>,</b> A	After se
Switch (HS)	Injector Volum			[mL/min]	S	ub	0 [mL/min	4 (	Control
Fuel 1 Fuel 2	First Injection			[usec]				- I r	Dead T
Twin Injector	Air Conditione	r Trim Trim Value	0.0	[%] D	ecrement C	oefficient	100 [%]		
Ignition	Load 1 Trim	Trim Value	0.0	[%] D	ecrement C	oefficient	100 [%]	1	indepe
Ignition 1 Ignition 2	Load 2 Trim	Trim Value	0.0	[%] D	ecrement C	oefficient	100 [%]		Jnder I
▲ · ISC ISC	Load 3 Trim	Trim Value	0.0	[%] D	ecrement C	oefficient	100 [%]		uel is i
▲ Other Control	Load 4 Trim	Trim Value	0.0	[%] D	ecrement C	oefficient	100 [%]		
- Anti-Lag Boost	Define Sub Ma	n Fix Map 1		-					of Stan
Naming Settings	Define Bub loa							I	njectio
Error Memo								i,	njectio
rieno									njectio
🚑 PRINT 📄 Comparis	on Parameter 🛛 🖽	CONNECTOR	SEND PAR	RAMETER		🗸 ок	X CAN		
								<u> </u>	
70-00 -NEW-	<b>4</b> 8								
🖪 [F1] Axis Setting									
E21Conversion Table	Ted		. Dand	T					
🐴 [F3] Fuel Control	Ind	ependent Injecto	r Dead	rime					
🗗 [F3]Fuel Map 1	Volt	.age 5.0 6	.0 7	.0 8.0	9.0	10.0	11.0 12	.0 13.0 14	.0 15.0
🗗 [F3]Fuel Map 2		ime 5000 400	0 300	0 2000	1625	1250	1100 95	0 825 70	0 650
🞒 [F3]Fuel Map 3									
🗗 [F3]Fuel Cut	Inde	ependent Injectio							
🗗 [F4] A/F		0 500					000 3500		
🐴 [F5] Ignition Control	0.2		0	0	0	0	0 0	0 0	0
🐴 [F5] Ignition Map 1	0.8		0	0	0	0	0 0	0 0	0
🗗 [F5]Ignition Map 2	0.8		0	0	0	0	0 0	0 0	0
🗗 [F6] ISC	0.8		0	0	0	0	0 0	0 0	0
🗗 [F7] Boost	0.9		0	0	0	Ŭ.	0 0	0 0	0
🗗 [F8] Valve Timing	1.1		0	0	0	0	0 _0	0 0	0
🞒 [F9] Option Output	1.2	9 0 0	0	0	0	0	0 ( 91	183 274	365
			0	0	0	0	0 183	365 548	731
📰 Standard Injection Tir	ne <u>1.6</u>		0	0	0	0	0 272	543 815	1086
📰 Injection Time at Star	rt <u>1.7</u>		0	0	0	0	0 363	726 1089	1451
📰 None Phase Injection	Time 1.9		0	0	0	0	0 454	908 1362 1091 1636	1817 2182
🔚 Independent Injecton 🗄	fime 2.2		0	0	0	0	0 637	1274 1910	2182
🐮 Main Injector Dead Lir	ne 2.3		0	0	0	0	0 726	1451 2177	2903
📰 Sub Injector Dead Time	2.5		0	0	0	0	0 817	1634 2451	3268
📰 Independent Injector [									
E Standard Injection Tir	AIDS								
E Injection Timing		Port 1	2	2 3	اه ا	51	el	71 01	
3.4 -NEW-	( <del>1</del> )(8)	Port 1 Cut 20000	20000	_	20000	20000	6 20000 2	7 8	
🖪 [F1] Axis Setting		Return 20000	20000		20000	20000		20000 20000	
🗗 🖪 [F2] Conversion Tab	ole	nocarri 20000	20000	20000	20000	20000	20000 2	2000	
🖪 [F3] Fuel Control									
🗗 [F3]Fuel Map 1		Parameter Setting		spatter as		-			
🗗 [F3]Fuel Map 2		Basic					Fuel	2	
🗗 [F3]Fuel Map 3		<ul> <li>Crankshaft/Camsh</li> <li>Input Setting</li> </ul>	aft	A/F Feedb	ack Setting				
[ 🖪 [F3] Fuel Cut		- Voltage				edback Ma	p OFF		
E-9 (F4) A/F		<ul> <li>Throttle/Accel</li> <li>Pressure</li> </ul>			A/F 2 Fe	edback Ma	p OFF	-	
🗗 [F5] 📰 Decelerati	on Fuel Cut	- Others		Start Tin	<b>20</b>	150	[eec]	Cycle Time	
🗗 [F5] 📰 RPM Fuel C		- Switch - Frequency			Condition	90.0			
	Pressure Fu	A/F - Knock Output Setting		Water Te			[deg=C]	Water Temp. Hig	<b>b</b>
··· All Feo'lli		- Voltage		water le	mp. LOW	- 70	meg of	Hater Temp. Hig	
		<ul> <li>Frequency</li> <li>Switch (LSL1)</li> </ul>	ſ	Fuel Cut C	ondition Sel			T-t-t-	Deser
		-Switch (LSL2)				RPM	Maker	Intake Air I	
		- Switch (LSH1) - Switch (LSH2)	. L			Air Flow	Volume	Air Flow Ef	mcier
		-Switch (HS)		Deceleration	on Cut d Condition	0.0	[km/h]	Return Trim Coe	fficie
		✓ Fuel Fuel 1						Recurn Trim Coe	an Gle
		Fuel 2		Start Del	ay ime	500	[msec]		
		<ul> <li>Ignition</li> </ul>		A/T Shift F	uel Cut Time	50	[msec]		
		- Ignition 1		Ontion Trip					

To control the injector independently, use Independent Injection Map. This map is usable for Mazda RX-8 or when onal injectors are installed. To is map, select "Independent" for Control Type in Fuel 1 under eter Setting.

etting shown on the left shows that pendent" is selected for the on output # 7 and 8 (F-CON al 63 and 64) to control these independently.

electing "Independent" as Fuel ol Type, enter Independent Injector Time of the injectors to make endent Injection Time Map.

Independent Injection Time Map, injected for a set time regardless ndard Injection Timing and on Timing; therefore, the fuel on amount for the independent on is not required to set.

Indepen	dent Inj	ection	Time													
	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	750
0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.14	0	0	0	0	0	0	0	<del></del>	- 0	- 0	- 0	- 0	- 0	- 0	- 0	
1.29	0	0	0	0	0	0	0	91	183	274	365	457	548	639	730	822
1.45	0	0	0	0	0	0	0	183	365	548	731	913	1096	1278	1461	1644
1.61	0	0	0	0	0	0	0	272	543	815	1086	1357	1629	1900	2172	2443
1.76	0	0	0	0	0	0	0	363	726	1089	1451	1814	2177	2539	2902	3265
1.92	0	0	0	0	0	0	0	454	908	1362	1817	2270	2724	3179	3633	4087
2.07	0	0	0	0	0	0	0	545	1091	1636	2182	2727	3272	3818	4363	4909
2.23	0	0	0	0	0	0	0	637	1274	1910	2547	3183	3820	4457	5094	5731
2.39	0	0	0	0	0	0	0	726	1451	2177	2903	3627	4353	5079	5805	6530
2.54	0	0	0	0	0	0	0	817	1634	2451	3268	4084	4901	5718	6535	7352

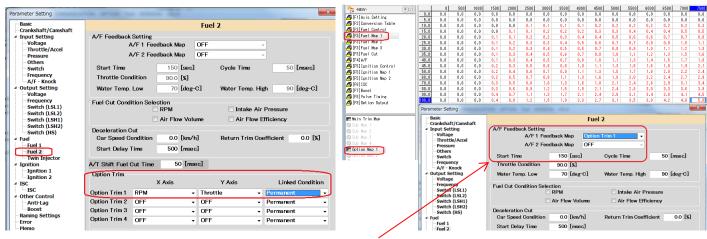
■ To determine the max rpm by a rev limiter using Independent Injection Time Map, check "RPM" in Fuel 2 under Parameter Setting, and enter the max rpm to both "Cut" and "Return" of the port of the independent injection in RPM Fuel Cut map under Fuel Cut. Without entering the max rpm, injection won't be performed independently because rev limiter functions at 0 rpm.

	▶ -NEW-  平岡		0	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
		0.20	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0	-58.0
	🐴 [F1] Axis Setting	0.28	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0	-56.0
	🐴 [F2]Conversion Table	0.36	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0	-54.0
	🞒 [F3]Fuel Control	0.44	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0	-52.0
	🞒 [F3] Fuel Map 1	0.52	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0	-50.0
	E [F3]Fuel Map 2	0.60	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0	-48.0
	🐴 [F3] Fuel Map 3	0.68	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0	-46.0
	🞒 [F3]Fuel Cut	0.76	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0	-44.0
	🐴 [F4] A/F	0.85	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0	-42.0
	🞒 [F5] Ignition Control	0.93	-40.0	-40.0	-40.0	-40.0													
	🞒 [F5] Ignition Map 1	1.01	-38.0	-38.0	-38.0	-38.0	For	a tur	bo-ei	ngine	, whe	en ma	aking	a ne	w file	e, set	the		
	🞒 [F5] Ignition Map 2	1.09	-36.0	-36.0	-36.0	-36.0	nreg	sure	rand	e to	he +	) 2ka	ofth	ne ma	ay ho	ost n	ressi	ire to	
	🐴 [F6] ISC	1.17	-34.0	-34.0	-34.0	-34.0													
	🐴 [F7] Boost	1.25	-32.0 -30.0	-32.0	-32.0	-32.0	mak	ke Fu	el I ri	m Ma	ap au	toma	ticall	y; thi	s ma	p pro	vides	s the	
	🞒 [F8] Valve Timing	1.33	-30.0	-30.0	-28.0	-28.0	mos	st effi	cient	filling	n of a	ir-fue	-l mix	dure	to cv	linde	rs at	the	
	🞒 [F9] Option Output	1.41	-28.0	-28.0	-28.0	-28.0								(cur c		mae	no ac	circ	
		1.43	-26.0	-24.0	-26.0	-24.0	max	kimur	11 000	ost pi	essu	re.							
		1.65	-22.0	-22.0	-22.0	-22.0	-				~ ·								
	📰 Main Trim Map	1.73	-20.0	-20.0	-20.0	-20.0	Ine	map	on t	ne le	rt sho	ws th	hat a	t the	maxi	mum	1 DOO	st	
	Sub Map 1	1.81	-18.0	-18.0	-18.0	-18.0	sett	ina is	2.54	lka a	nd -0	.8ka	maxi	imum	nea	ative	pres	sure,	
	🛇 Sub Map 2	1.89	-16.0	-16.0	-16.0	-16.0													
I N /	ain Trim Man	1.97	-14.0	-14.0	-14.0	-14.0		-										nt fillir	ig
1	ain Trim Map	2.05	-12.0	-12.0	-12.0	-12.0	ratio	э. (В	ecau	se th	e thr	ottle '	valve	is clo	osed,	air c	anno	t be	
		2.14	-10.0	-10.0	-10.0	-10.0		en in.							,				
	⊙ Option Map 2	2.22	-8.0	-8.0	-8.0	-8.0	ιακο		)										
	🛇 Option Map 3	2.30	-6.0	-6.0	-6.0	-6.0	Dowf	-	+hia a		~ ~ ~ ~	ب اسم م			a fa				
	🛇 Option Map 4	2.38	-4.0	-4.0	-4.0	-4.0	Peri	orm	unis s	ettin	g pro	peny	so u	ie un	le lo	rseu	ing c	an be	2
		2.46	-2.0	-2.0	-2.0	-2.0	sho	rtene	d.										
		2.54	0.0	0.0	0.0	0.0			-										
		2.62	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		2.70	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

# Throttle Trim Map

To make a map for throttle trim, select "RPM" for X-axis of Option Trim 1 and "Throttle" for Y-axis.

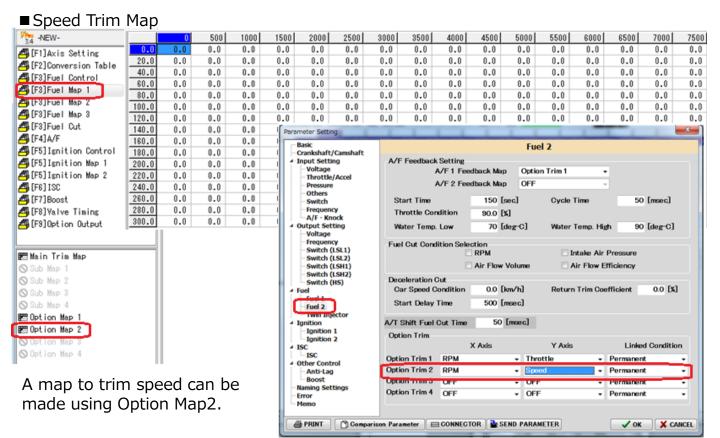
Vehicles like Skyline GT-R, Pulsar GTI-R, Levin/Trueno AE101/111, etc. are equipped with throttle valves independent by each port. To perform setting by D-jetro, it is required to prepare the throttle map. Since the pressure fluctuation inside the intake port is extremely low, the same amount of load is recognized even under a different throttle angle resulting in an improper fuel injection. To avoid this symptom, the following map to trim the fuel amount for each throttle angle is useful.



70-00-00-00-00-00-00-00-00-00-00-00-00-0	<b>₽</b> 83
🖪 [F1] Axis Setting	
🖪 [F2]Conversion Table	
🖪 [F3] Fuel Control	
🗐 [F3]Fuel Map 1	
PJ[F3]Fuel Map 2	
🗗 [F3]Fuel Map 3	
🐴 [F3] Fuel Cut	
🗗 [F4] A/F	
🖪 📰 Main Trim Map	
🖪 🛇 Sub Map 1	
🖪 🛇 Sub Map 2	
🗗 🖸 🛇 Sub Map 3	
🗗 🔕 Sub Map 4	
A Sub Map 4 A ME Option Map 1	

A/F feedback data can be reflected to Option Map 1 (throttle trim map) if necessary.

		0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
ble	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	15.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5
	20.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8
	25.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1
	30.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
· ·	35.0	0.0	0.0	0.0	0.1	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.3	1.5	1.6
	40.0	0.0	0.0	0.0	0.1	0.3	0.4	0.5	0.7	0.8	1.0	1.1	1.3	1.4	1.5	1.7	1.8
	45.0	0.0	0.0	0.0	0.2	0.3	0.5	0.6	0.8	1.0	1.1	1.3	1.5	1.6	1.8	1.9	2.1
	50.0	0.0	0.0	0.0	0.2	0.4	0.6	0.7	0.9	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.4
	60.0	0.0	0.0	0.0	0.2	0.5	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.4	2.7	2.9
	70.0	0.0	0.0	0.0	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.4	2.6	2.9	3.1	3.4
	80.0	0.0	0.0	0.0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.8	3.0	3.3	3.6	3.9
	90.0	0.0	0.0	0.0	0.4	0.7	1.1	1.3	1.7	2.1	2.4	2.8	3.1	3.4	3.8	4.1	4.5
	100.0	0.0	0.0	0.0	0.4	0.8	1.2	1.5	1.9	2.3	2.7	3.1	3.5	3.8	4.2	4.6	5.0



 $\uparrow$  A/F feedback data can be reflected to Option Map 2 (speed trim map) if necessary.

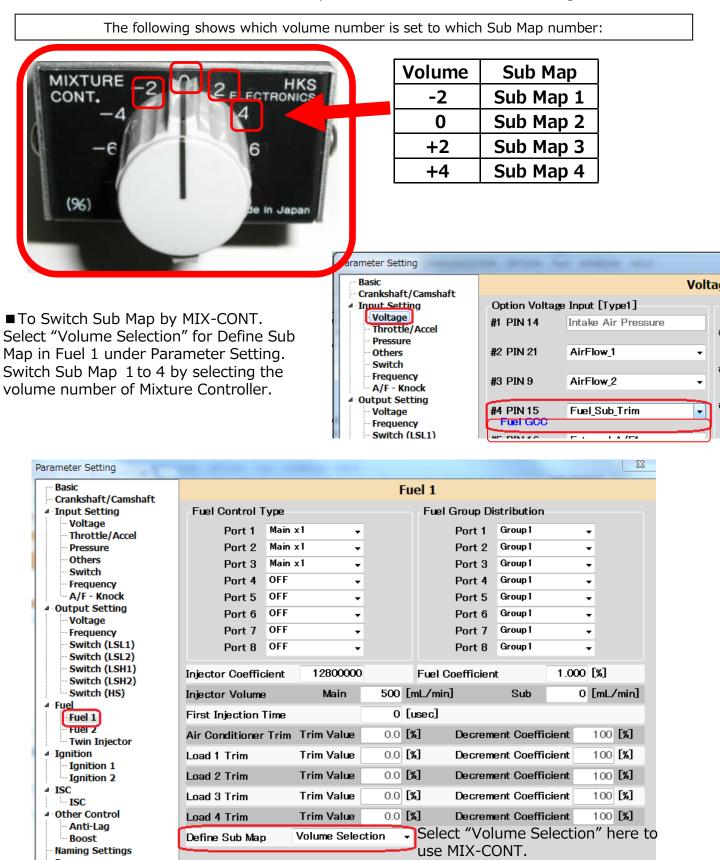
■ Usage example of Sub Map

Determine the sub map to use by selecting the sub map number for "Define Sub Map" under Fuel1 of Parameter Setting.

70 -NEW-	72	0.20	0.0	500 0.0	1000	1500	2000	2500	3000	3500 0.0	4000	4500	5000	5500 0.0	6000	6500	7000	7500
🞒 [F1] Axis Setting		0.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
🗛 [F2]Conversion Table		0.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
🐴 [F3] Fuel Control		0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
🞒 [F3]Fuel Map 1		0.83	0.0	0.0	1	eter Settir												
F3]Fuel Map 2		0.98	0.0	0.0	r Ba	sic								Fuel 1				
🖪 [F3]Fuel Map 3		1.14	0.0	0.0	Cr	ankshaft/	/Camshaf	t						i uei 1				
🗗 [F3]Fuel Cut		1.29	0.0	0.0	⊿ In	put Setti	ng		Fuel Co	ntrol T	ype			Fu	el Group	Distrib	ution	
🗗 [F4] A/F		1.45	0.0	0.0	-	Voltage	/Accel		P	ort 1	Main x1	I .	•		Port	1 Grou	ıр 1	•
🗗 [F5] Ignition Control		1.61	0.0	0.0		Pressure			P	ort 2	Main x1		•		Port	2 Grou	р1	•
🗗 [F5] Ignition Map 1		1.76	0.0	0.0	-	Others			P	ort 3	Main x1				Port	3 Grou	p1	-
🗗 [F5] Ignition Map 2		2.07	0.0	0.0		Switch					OFF				Port	-	•	
🗗 [F6] ISC 🐴 [F7] Boost		2.23	0.0	0.0		-Frequent -A/F - Kn				0	OFF		·		Port		•	
A [F8] Valve Timing		2.39	0.0	0.0	4 OL	itput Set				0100	OFF		•			-	•	•
A [F9] Option Output		2.54	0.0	0.0		Voltage				01110			•		Port		•	
						Frequence				0	OFF		•		Port		•	
						Switch ( Switch (			F	ort 8	OFF		•		Port	8 Grou	ip 1	-
₽ Main Trim Map ₽ Sub Map 1					-	Switch ( Switch (	LSH1)		Injector	Coeffici	ient	1280000	0	Fue	l Coeffici	ient		1.000 [3
🛇 Sub Map 2						Switch (			Injector	Volume		Main	500	EmL/n	nin]	S	ub	0 [
Sub Map 3 Sub Map 4					fu fu	Fuel 1			First Inje	ection T	ime		0	[usec]	I			
E Option Map 1						Fuel 2 Twin Inj	ector		Air Cond	litioner	Trim T	rim Value	0.0	[%]	Decr	ement C	oefficie	ent 1
ET Option Map 2						nition Ignition			Load 1 T	rim	1	rim Value	0.0	[%]	Decr	ement C	oefficie	ent 1
Option Map 3						Ignition			Load 2 T	rim	T	rim Value	0.0	[%]	Decr	ement C	oefficie	ent 1
						C ISC			Load 3 T	rim	T	rim Value	0.0	[%]	Decre	ement C	oefficie	ent 1
					⊿ Ot	her Cont			Load 4 T	rim	T	rim Value	0.0	[%]	Decr	ement C	oefficie	ent 1
						- Anti-Lag - Boost			Define S	ub Man	F	ix Map 1						
					Na	ming Set	tings					FF						
						ror		I				x Map 1						
Sub M	ap 1		(RPM x	Intake /	A M	emo						x Map 2						
												ix Map 3 ix Map 4						
						PRINT			n Paramet		CON			MET				

#### ■ Usage example of Sub Map – Switching Sub Map by Mixture Controller

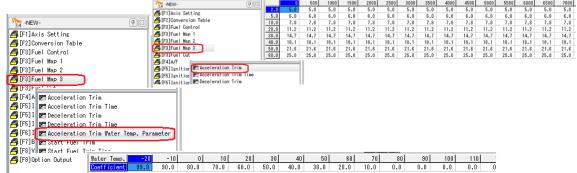
Sub Maps can be switched using Mixture Controller. To use Mixture Controller to switch Sub Maps, select "Fuel Sub Trim" for the terminal Mixture Controller is connected in Voltage of Input Setting under Parameter Setting. (See #4 PIN 15 Fuel GCC of Parameter Setting shown below.) Also, select "Volume Selection" for Define Sub Map in Fuel 1 under Parameter Setting.



Water Temperature Trim Map

Image: Section sectio	Fuel trim map by water temperature. This map is to implement appropriate combustion by increasing fuel injection volume at low water temperature. This map is effective for both low and high load.
🐴 [F3]Fuel Cut 🛛 📴 Water Temp. Trim 🔵	
🐴 [F4] A/F 🛛 🔠 Intake Air Temp. Trim	
🖪 [F5]Ignition C 📰 Idle Intake Air Temp. Trim	
🐴 [F5]Ignition M 🔠 Port Trim	
🐴 [F5]Ignition M	
🐴 [F6] ISC	
🐴 [F7] Boost 🛛 Water Temp. 🔽 -20 -10 (	0 10 20 30 40 50 60 70 80 90 100 110 120 130
🗗 [F8]Valve Timin Trim Value 45.0 40.0 35.0	0 30.0 25.0 20.0 15.0 10.0 5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
🚑 [F9]Option Output	

#### ■ Acceleration Trim Water Temp. Parameter Map



When accelerating while the water temperature is low, the fuel volume becomes low. To compensate the low fuel volume, Acceleration Trim Water Temp. Parameter Map is effective. The increase amount coefficient of this map is added to the volume input to Acceleration Trim Map to maintain acceleration.

#### ■ Idle Intake Air Temp. Trim • Intake Air Temp. Trim Map Intake Air Temp. Trim Map 3.4 -NEWntake Air Temp. **P**[33] 30 40 50 601 701 801 90 100 110 120 -10 0 10 20 3.7 5.7 1.8 -1.7 -3.2 -4.6 -10.7 🐴 [F1] Axis Setting Trim Value 0.0 -6.0 -7.3 -8.5 -9.6 -11.7 -12.7 🐴 [F2] Conversion Table Idle Intake Air Temp. Trim Map 🐴 [F3] Fuel Control 🐴 [F3]Fuel Map 1 ntake Air Temp. -10 0 10 201 301 40 501 60 70 801 901 100 110 120 13 🐴 [F3] Fuel Map 2 5.7 0.0 -4.6 -7.3 -8.5 -9.6 -10.7 -11.7 -12.7 -13. 1.8 -3.2 -6.0 - irsjruet map 🗺 Water Temp. Trim 🐴 [E3]Euel: Cut. Parameter Setting 🗺 Intake Air Temp. Trim 🐴 [F4] A/F 🎒 [F5]Ignition C 🕅 Idle Intake Air Temp. Trim Basic Basic A [F5] Ignition M Port Iru Crankshaft/Camshaft Input Setting Number of Cylinders 6 Displacement 2500 [mL] 🐴 [F5] Ignition Map 2 Voltage TOYOTA1 TOYOTA1 🐴 [F6] ISC Throttle/Accel Crank Signal Type Cam Signal Type • 🐴 (F71Boost Pressure Others 🐴 [F8] Valve Timing 0.0 [degree] Crank Offset Angle Switch 🐴 [F9] Option Output Frequency Crank Signal Sub Parameter 0 A/F - Knock **Output Setting** Voltage Type of Intake Air Volume Measurement Frequency Complete Combustion Judgement RPM 500 [r/min] Switch (LSL1) Switch (LSL2) 200 [r/min] Engine Stall Judgement RPM Switch (LSH1) Switch (LSH2) 0 [msec] Power Holding Time 0 [sec] Scramble Trim Time Switch (HS) 12000 [mV] Standard Power Supply Voltage Fuel Fuel 1 Fuel 2 2.0 [%] 2.0 [%] Fuel Cut Throttle Fuel Cut Accel Position Twin Injector Ignition 50 [msec] Thruttle Tangent Calibration Samu TIMO Ignition 1 100.0 [%] A/T Shift Up/Down Throttle Condition Ignition 2

Intake Air Temp. Trim Map and Idle Intake Air Temp. Trim Map adjust the A/F to an appropriate level by measuring the intake air temperature and trimming the fuel according to the air density change. Idle Intake Air Temp. Trim Map becomes effective when Fuel Cut Throttle in Basic under Parameter Setting is less than the set percentage (2% in Parameter shown above.) Intake Air Temp. Trim Map becomes effective when Fuel Cut Throttle is more than the set percentage.

Note... When HKS intake air temp sensor is installed to the intake manifold, because the sensor detects the heat from the intake manifold and/or engine bay temperature, the decrease correction of the fuel in a high temp area of Idle Intake Air Map is performed and the hunting is caused. In this case, adjustment of a Map or relocation of the intake air temp sensor is required.

# ■ Port Trim Map

7ho -NEW-		0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
	9 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
▲ [F1] Axis Setting	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[F2]Conversion Table	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
🗗 [F3]Fuel Control	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A [F3] Fuel Map 1	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
🗐 [F3] Fuel Map 2	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
For the map of	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	- 8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
📰 Water Temp. Trim																	
📰 Intake Air Temp. Trim																	
📰 Idle Intake Air Temp. Trim																	
🖅 Port Trim																	

E.g.) Skyline GT-R (RB26DETT) [6-cylinder Sequential Injection]

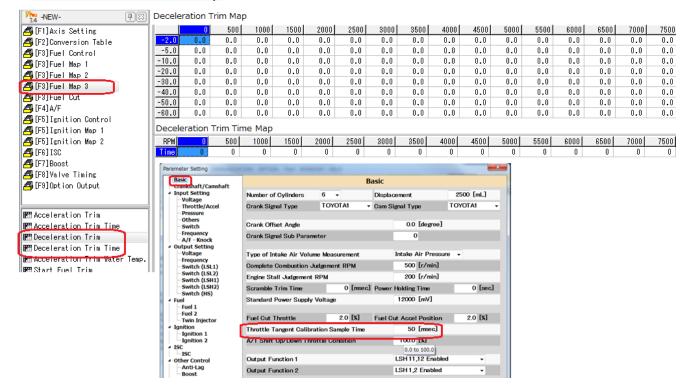
If the spark plug of #6 cylinder is abnormally burnt after vehicle setting after setting is done, unbalanced intake air distribution is assumed. To correct this symptom, use Port Trim Map and increase the fuel in the area higher than 6000rpm by 5%.

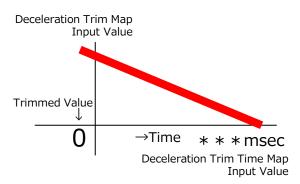
Port Sequence:

- Port  $1 = 1^{st}$  cylinder Port  $2 = 5^{th}$  cylinder Port  $3 = 3^{rd}$  cylinder Port  $4 = 6^{th}$  cylinder
- Port  $5 = 2^{nd}$  cylinder Port  $6 = 4^{th}$  cylinder

\* Port Trim Map does not perform correction by the load (only by RPM).

#### ■ Deceleration Trim Map





This map is not frequently used. The map is activated when the throttle angle decreases during "Throttle Tangent Calibration Sample Time" under Parameter Setting.

For example, "Throttle Tangent Calibration Sample Time" is set to [50msec] as shown above. When accelerating to 3000rpm from idling, and the rpm dropped rapidly within a set time, the fuel is compensated in accordance with Deceleration Trim Map.

The compensated fuel volume is decreased gradually so it becomes "0" after the time set under Deceleration Trim Time. It is not assumed that the throttle angle becomes 0; therefore, the map is activated when the throttle angle suddenly changes to 20% from 80%.

This map may be useful to prevent after fire when setting is done using the L-Jetronic.

#### Deceleration Fuel Cut Map

Basic Fuel 2			
		Bas	ic
Input Setting     A/F Feedback Setting     Number of Cylinde     Number of Cylinde	ers 6 ·	-	)is;
Voltage A/F 1 Feedback Map OFF Voltage - Throttle/Accel Crank Signal Type	TOYO	DTA1 • C	an
Pressure A/F 2 Feedback Map OFF Pressure Others Others Crank Offset Ang	6		
Switch Start Time Too Isety Oyde Time Too Ensety Frequency			
-A/F Knock Park Sub	Parameter		
Voltage Type of Intake Ai	r Volume Meas	urement	
Frequency     Fuel Cut Condition Selection     Switch (LSL1)     Fuel Cut Condition Selection     Switch (LSL1)     Complete Combus	tion Judgemer	nt RPM	
Switch (LSL2) Engine Stall Judg	ement RPM		
Switch (LSH2) Scramble Trim Til	ne	0 [msec] P	ю <b>н</b>
Switch (HS) Deceleration Cut Standard Power S Fuel Car Speed Condition 0.0 [km/h] Return Trim Coefficient 0.0 [k] Fuel Standard Power S	upply Voltage		
Fuel 1         Fuel 2         Fuel 2<	_	2.0 [%] F	ue
I win Injector	Calibration Sa	mple Time	
Ignition 1 A/T Shirt Fuel Cut Time 50 [Insec] Ignition 1 Ignition 2 A/T Shirt Up/Dow	n Throttle Co	ndition	
When the second secon	1001	1101 100	1 10
34 ************************************	100 1500 1	110 120 1500 1500	13
A F1 JAxis Setting Return 2300 2260 2220 2180 2140 2100 1300 1700 1500 1300 1300 1300		1300 1300	130
[F2]Conversion Table     [F3]Fuel Control			
□ U GJ German P T □ Em Deceleration Fuel Cut □ Em Fuel Map 2 □ Cut			
F31Fuel Map 3 Nintake Air Pressure Fuel Cut			
		3250	350
<mark>-0.80</mark> 480 480 480 484 484 486 486 486 486 486 486 486 486	6 <b>4</b> 86	486	46
<u>-0.73</u> 753 753 753 761 767 767 767 767 767 767 767 767	7 767	.67	76
-0.67 985 985 985 995 1004 1004 1004 1004 1004 1004 1004 100	4 1004	004	100
-0.60 1252 1252 1252 1266 1278 1278 1278 1278 1278 1278 1278	8 1278	278	127
	2 1572	572	157
Fuel Control	3 1823	823	182
	6 2116	116	211
Std. Injection Time -0.33 2477 2477 2477 2477 2477 2477 2477 24	7 2477	477	247
Map -0.27 2788 2788 2788 2788 2788 2788 2788 2	8 2788	788	278
-0.20 3156 3156 3156 3156 3156 3156 3156 3156	6 3156	156	315
-0.13 3542 3551 3594 3594 3594 3594 3594 3594 3594 3559 3594 359	4 3594	594	359
-0.07 3884 3901 3910 3927 3918 3884 3884 3901 393	5 3970	970	391
0.00 4283 4283 4283 4283 4283 42 3 4476 4476 4476 4512 454	8 4411	411	441
	5 4991	982	491
		5665	566
0.09 4984 4984 4984 4984 4984 5055 5082 5064 5037 5055 0.18 5072 5072 5072 5079 5106 456 5456 5665 5665 5665 0.27 5072 5072 5072 5079 5106 5677 501 501 501 501 501		5665	566 624

This map is to set the deceleration fuel cut conditions.

For example, the conditions set in the map shown above are as follows:

Fuel cut begins at 1500rpm when the water temperature reaches  $70^{\circ}$ C.

Fuel cut stops (returns to normal injection) at 1300rpm.

Fuel Cut Throttle of Basic under Parameter Setting is set to "2%".

Deceleration fuel cut's start delay time is set to 500msec.

Under these conditions, when the throttle is off (less than 2% of the throttle angle) after the engine rpm is raised more than 1500rpm with the throttle angle 2% or more, Deceleration Fuel Cut begins after 500msec after the throttle is off. Once the engine rpm drops to 1300rpm, the fuel injection is performed in accordance with Standard Injection Time map until the engine idling.

With the Standard Injection Time Map shown above, when the throttle is off (less than 2% of the throttle angle) after the engine rpm is raised more than 3250rpm with the throttle angle 2% or more, Deceleration Fuel Cut begins after 500msec; The fuel injection time becomes 0  $\mu$ sec. (This improves the engine brake performance, prevents the after fire, and improves the fuel consumption.)

Make sure to set a proper injection time so the engine can turn into idling without an engine stall after the fuel cut. (The output when the fuel injector is returned to the standard injection is the sum of the input values of Injector Dead Time map and Standard Injection Time map.)

Deceleration Fuel (	Cut Ma	<u>ap</u>												
<u>– Blind Spot</u>	Decelera	ation Cut												
[Note for Mapping]	Car Sp	eed Con	dition	0.0 [	km/h]	Ret	urn Trim	Coefficie	ent	0.0 [%]	Pa	ramet	er•Fu	el 2
	Decele	eration	Fuel C	Cut Tin	ne Out	Coeffi	cient		100	0.0 [%]	] Pa	ramet	er∙Igr	nition 1
		100	750	1000	1300	1500	1750	2000	2250	2500	2750	3000	3250	350
	-0.80	480	480	480	484	486	486	486	486	486	486	486	486	46
	-0.73	753	753	753	701	767	767	767	767	767	767	767	767	76
	-0.67	985	985	985	995	1004	1004	1004	1004	1004	1004	1004	1004	100
	-0.60	1252	1252	1252	1266	1278	1278	1278	1278	1278	1278	1278		127
	-0.53	1539	1539	1539	1557	1572	1572	1572	1572	1572	1572	1572	1 72	157
Evel Control	-0.47	1783	1783	1783	1803	1823	1823	1823	1823	1823	1823	1823	1 23	182
Fuel Control	-0.40	2116	2116	2116	2116	2116	2116	2116	2116	2116	2116	2116	2 16	211
Std. Injection Time	-0.33	2477	2477	2 77	2477	2477	2477	2477	2477	2477	2477	2477	2 77	247
Мар	-0.27	2788	2788	278	2788	2788	2788	2788	2788	2788	2788	2788	2 88	278
·	-0.20	3156	3156	3156	3156	3156	3156	3156	3156	3156	3156	3156	3 56	315
	-0.13	3542	3551	3594	594	3594	3594	3594	3559	3594	3594	3594	3 94	359
	-0.07	3884	3901	3910	39 7	3927	3918	3884	3884	3901	3935	3970	3 70	391
	0.00	4283	4283	4283	4283	4283	4476	4476	4476	4512	4548	4411	4 11	441
	0.09	4984	4984	4984	4984	4984	5055	5082	5064	5037	5055	4991	4 82	491
	0.18	5072	5072	5072	5079	6	5456	5456	5665	5665	5665	5665	5665	566
	0.27	5072	5072	5072	5079	5106	56					27	6218	624
		5030	5070	5030	5030	5400	5033	A4A.				0000		000
		100	750	1000	1300	1500	1750	2000	2250	2500	2750	3000	3250	350
Ignition Control	-0.80	20	20	20	21	25	27	28	30	32	34	35	35	3!
Ignition Main Map	-0.73	20	20	20	21	25	28	29	35	39	39	35	35	3!
	-0.67	20	20	20	22	25	28	29	35	39	39	40	12	4:
	-0.60	20	20	20	23	25	26	27	35	39	39	39	42	4:
	-0.53	20	20	22	24	26	28	27	33	37	37	37	38	3:
	-0.47	21	21	21	24	28	28	29	34	37	39	39	38	3:
	-0.40	22	22	22	24	26	30	32	33	37	37	37	35	3!
Practically, Idle	-0.33	22	22	22	24	26	30	32	34	36	36	37	35	3!
Ignition Main map	-0.27	23	23		24	26	35	38	37	38	39	37	36	31
becomes effective	-0.20	24	24	24	25	27	35	38	40	37	37	37	38	3:
	-0.13	24	24	24	26	30	32	34	36	37	37	37	39	3:
	-0.07	24	24	24	6	28	31	34	36	35	37	36	38	3:
	0.00	24	24	24	2.	26	26	30	33	33	34	35	35	3:
	0.09	25	25	25	25	24	25	25	31	31	34	35	35	3.
	0.18	25	25	25	24	22	25	24	25	29	31	33	35	31
	0.27	25	25	25	23	21	24	24	24	25	29	30	33	3!

As explained in a previous page, when the throttle is off (less than 2% of the throttle angle) after the engine rpm is raised more than 3250rpm with the throttle angle 2% or more; then, when the engine rpm is dropped to 1300rpm, Standard Ignition Time map and Ignition Main map are recognized.

(Actually, Idle Ignition Main map becomes effective. = The reason will be explained later.)

The fuel injection time and ignition timing are adjusted based on Return Trim Coefficient of Fuel 2 and Deceleration Fuel Cut Time Out Coefficient of Ignition 1 under Parameter Setting.

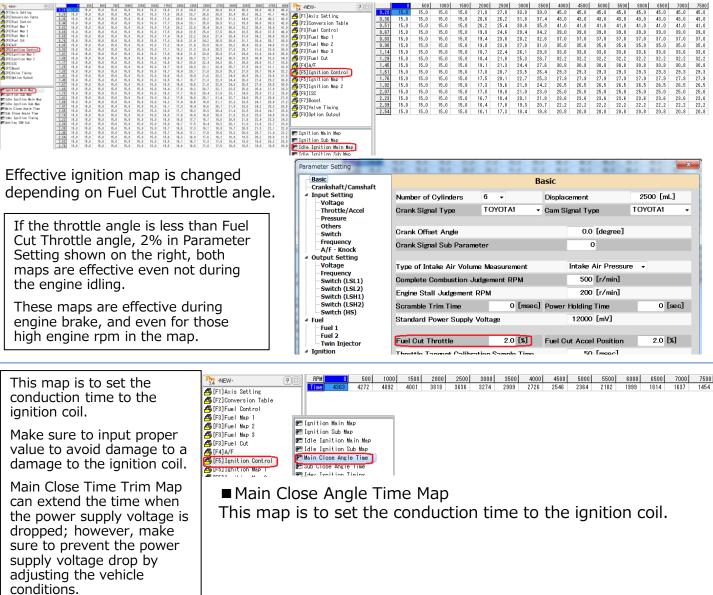
With the maps shown above, the injection time is 484µsec at 1300rpm. If Return Trim Coefficient is set to 0%, the injection returns to the standard injection without any fuel increase. If Return Trim Coefficient is set to between +/-100%, the fuel injection amount is increased or decreased before returning to the standard injection. The ignition is returned to the standard timing at BTDC21° and 1300rpm. If Deceleration Fuel Cut Time Coefficient is set to 100%, the advance angle correction is done before returning to the standard ignition timing. If Deceleration Fuel Cut Time Coefficient is set to -100%, the retarded angle correction is done before returning to the standard ignition timing.

If the values (rpm) input to Deceleration Fuel Cut map are too high, even the throttle angle becomes more than Fuel Cut Throttle angle, Deceleration Fuel Cut does not work unless the engine rpm reaches the value input to the map; therefore, a fuel cut is not executed. It causes non-combusted gasoline to go to the exhaust leading after fire.

Also, if the values (rpm) input to Deceleration Fuel Cut map are too low, the fuel injection timing and engine rpm are too late; therefore, it causes failures such as engine stalling.

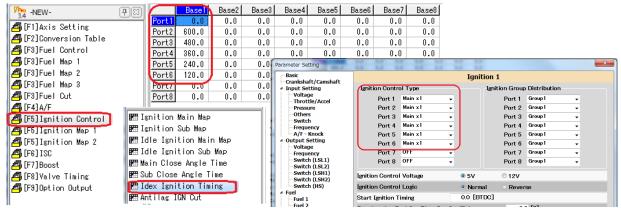
If the values for Cut and Return are too close, fuel cut and standard injection are repeated causing the generation of jerky vibration during driving.

### ■ Ignition Main Map / Idle Ignition Main Map



#### ■ Index Ignition Timing Map

This map is the timing map of ignition output signal based on Ignition Control Type of Ignition 1 under Parameter Setting. This map actually controls the ignition retard and advance by the values of Standard Ignition Timing map based on the timing shown below:



Like Standard Injection Timing map, it is required to set the compression top dead center (TDC) of 720°(one cycle) to each port. Ignition Main Map works based on the angle set to this map. Mapping is not required except for special cases.

0.0           5.0           10.0           15.0           20.0           25.0           30.0           35.0           40.0           50.0           60.0           70.0           80.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	<ul> <li>Input S</li> <li>Volta</li> </ul>	aft/Camsh etting age ttle/Accel	0.0 0.0 0.0	0.0 0.0 0.0 Ignition Cu	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0		0.0 0.0 0.0 Ignition		0.0		0.0	0. 0. 0.
$ \begin{array}{r} 10.0\\ 15.0\\ 20.0\\ 35.0\\ 35.0\\ 40.0\\ 45.0\\ 50.0\\ 60.0\\ 70.0\\ \end{array} $	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 arameter S Basic Cranksh Input S Volta	0.0 etting aaft/Camsh etting age ttle/Accel	0.0	0.0	0.0 0.0 nt RPM	0.0	0.0	0.0	0.0 0.0 n 2	0.0	0.0	0.0	0.
$ \begin{array}{r} 15.0\\ 20.0\\ 25.0\\ 30.0\\ 35.0\\ 40.0\\ 45.0\\ 50.0\\ 60.0\\ 70.0\\ \end{array} $	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	arameter S Basic Cranksh A Input S Volta	etting aft/Camsh etting age ttle/Accel	0.0	0.0	n n it RPM	0.0	0.0	0.0	n 2	0.0	0.0	0 0	. 0
20.0 25.0 30.0 35.0 40.0 45.0 50.0 60.0 70.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	Basic Cranksh Input S Volta	etting aft/Camsh etting age ttle/Accel	-	<u> </u>	rt RPM			- 14	n 2				<u> </u>
25.0 30.0 35.0 40.0 45.0 50.0 60.0 70.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	Basic Cranksh Input S Volta Thro	aft/Camsh etting age ttle/Accel			rt RPM				n 2				
30.0 35.0 40.0 45.0 50.0 60.0 70.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	Cranksh Input S Volta Thro	etting age ttle/Accel	aft	Ignition Cu				Ignitio					
35.0 40.0 45.0 50.0 60.0 70.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	Volta	age ttle/Accel		Ignition Cu									
40.0 45.0 50.0 60.0 70.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0	Thro	ttle/Accel			Norm								
45.0 50.0 60.0 70.0	0.0 0.0 0.0	0.0	0.0					NOTINE	1 2000	00 [rpm]		Ca	ar Speed	20000	[rpm]	
50.0 60.0 70.0	0.0	0.0			sure			Start	2000	00 [rpm]						
60.0 70.0	0.0			Othe			Ignition Cu	# (Start)	Sotting							
70.0		0.0	0.0	Swit	ich uency					Pulse Nur	nher	10 [Co	unt]			
	0.0	0.0	0.0	A/F	- Knock			RPM Trir		1 0100 1101		0 [rpi	-			
	0.0	0.0	0.0	Output												
				Volta				Trim				0.0 [de	-			
				Swit	ch (LSL1)			Hold Tim	в			0 [ms	ec]			
							Knock Inter	oration T	im							
								-		o						
					ch (HS)		Osing	Non	e-Use	ouse						
					1		Start Kni	ock Integ	ration 3	0000						
							Ciption Tri	m								
							Option		XA	vie		Y Avis		Linke	d Conditi	nn
							Option Trir				Thrott					
				Ignit								ie				<u> </u>
										•						
					ontrol					•						-
							Option Trin	n 4 OFF		•	OFF		<b>•</b>	Permaner	nt	•
				Error	secongs											
				Memo												
	30.0 100.0	90.0 0.0	90.0 0.0 0.0	<u>30.0</u> 0.0 0.0 0.0 100.0 0.0 0.0 0.0	30.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         Swith           Swith         Swith         Swith         Swith           Swith	80.0         0.0         0.0         -requency           100.0         0.0         0.0         -switch (LSL2)           -Switch (LSL2)         -switch (LSL2)           -Switch (LSH2)         -switch (LSH2)           -Switch (LSH2)         -switch (LSH2)	90.0         0.0         0.0         -requency           100.0         0.0         0.0         -switch (LSL1)           Switch (LSL1)         -switch (LSL1)           - Fuel         -           - Fuel         -           - Fuel         -           - Switch (LSL2)         -           - Switch (LSL2)         -           - Switch (LSL2)         -           - Fuel         -           - Switch (LSL2)         - </td <td>90.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0<td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using          <ul> <li>Non</li> <li>Fuel</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Injector</li> <li>Injecto</li></ul></td><td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using          None-Use           Fuel         Fuel         Start Knock Integration 3         Start Knock Integration 3           Fuel         Fuel         Start Knock Integration 3         Option Trim         X A           Start Knock Integration 1         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 2         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 4         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 5         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 4         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5           Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integratin 5           Start Knock Inte</td><td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (ISI1)           - Fuel 2         - Trwin Injector         - Switch (ISin1)         - Option Trim         X Axis           - Insc         - Other Control         - And: Tag         - Soost         - Memo         - Option Trim 4         OFF</td><td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Through 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Martilion         - Switch (1512)         - Switch (1512)         - Officin Trim           - Other Control         - Antiliag         -</td><td>90.0         0.0<td>80.0         0.0<td>80.0         0.0         0.0         0.0           100.0         0.0<td>80.0         0.0         0.0         0.0         0.0           100.0         0.0</td></td></td></td></td>	90.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0 <td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using          <ul> <li>Non</li> <li>Fuel</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Injector</li> <li>Injecto</li></ul></td> <td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using          None-Use           Fuel         Fuel         Start Knock Integration 3         Start Knock Integration 3           Fuel         Fuel         Start Knock Integration 3         Option Trim         X A           Start Knock Integration 1         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 2         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 4         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 5         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 4         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5           Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integratin 5           Start Knock Inte</td> <td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (ISI1)           - Fuel 2         - Trwin Injector         - Switch (ISin1)         - Option Trim         X Axis           - Insc         - Other Control         - And: Tag         - Soost         - Memo         - Option Trim 4         OFF</td> <td>80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Through 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Martilion         - Switch (1512)         - Switch (1512)         - Officin Trim           - Other Control         - Antiliag         -</td> <td>90.0         0.0<td>80.0         0.0<td>80.0         0.0         0.0         0.0           100.0         0.0<td>80.0         0.0         0.0         0.0         0.0           100.0         0.0</td></td></td></td>	80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using <ul> <li>Non</li> <li>Fuel</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Injector</li> <li>Injecto</li></ul>	80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0           Switch (ISL1)         Switch (ISL2)         Switch (ISH2)           Switch (ISH2)         Switch (ISH2)         Using          None-Use           Fuel         Fuel         Start Knock Integration 3         Start Knock Integration 3           Fuel         Fuel         Start Knock Integration 3         Option Trim         X A           Start Knock Integration 1         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 2         Start Knock Integration 3         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 4         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 3         Start Knock Integration 5         Start Knock Integration 3         Start Knock Integration 3           Start Knock Integration 4         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5           Start Knock Integration 5         Start Knock Integration 5         Start Knock Integration 5         Start Knock Integratin 5           Start Knock Inte	80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Switch (ISI1)         - Switch (ISI1)         - Switch (ISI1)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (ISI1)           - Fuel 2         - Trwin Injector         - Switch (ISin1)         - Option Trim         X Axis           - Insc         - Other Control         - And: Tag         - Soost         - Memo         - Option Trim 4         OFF	80.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           100.0         0.0         0.0         0.0         0.0           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1511)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Switch (1512)         - Switch (1512)         - Switch (1512)           - Fuel 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Through 1         - Fuel 2         - Trwin Injector         - Switch (1512)           - Martilion         - Switch (1512)         - Switch (1512)         - Officin Trim           - Other Control         - Antiliag         -	90.0         0.0 <td>80.0         0.0<td>80.0         0.0         0.0         0.0           100.0         0.0<td>80.0         0.0         0.0         0.0         0.0           100.0         0.0</td></td></td>	80.0         0.0 <td>80.0         0.0         0.0         0.0           100.0         0.0<td>80.0         0.0         0.0         0.0         0.0           100.0         0.0</td></td>	80.0         0.0         0.0         0.0           100.0         0.0 <td>80.0         0.0         0.0         0.0         0.0           100.0         0.0</td>	80.0         0.0         0.0         0.0         0.0           100.0         0.0

To use the throttle trim map for the ignition timing, Option Trim of Ignition 2 under Parameter Setting must be set up. This map is to trim the ignition based on the throttle angle and engine rpm. The ignition timing is delayed or advanced to the standard ignition timing.

™     NEW-       ▲     [F1] Axis Setting       ▲     [F2] Conversion Table       ▲     [F3] Fuel Control		Temperature Trim Map is to adjust the ignition timing based on the water temperature.
A [F3]Fuel Map 1	Water Temp20	-10 0 10 20 30 40 50 60 70 80 90 100 110 120 130
A [F3]Fuel Map 2	Trim Value 5.0	5.0 5.0 5.0 4.0 3.0 2.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
🗗 [F3]Fuel Map 3	III.	
🞒 [F3]Fuel Cut	🛇 Sub Map 1	
🗗 🗗 [F4] A/F	🛇 Sub Map 2	
🖪 [F5] Ignition Control	Sub Map 3	With the map shown above, the ignition timing is
🖪 [F5] Ignition Map 1	🚫 Sub Map 4	
📇 [F5]Ignition Map 2	📰 Option Map 1	advanced until the water temperature reaches 50°C.
🗗 [F6] ISC	Option Map 2	NOTE: This map is constantly effective even during high
🗗 [F7] Boost	Option Map 3	
🗗 [F8] Valve Timing	Option Map 4	speed driving.
🖪 [F9]Option Output	😰 Water Temp. Trim 🔵	
	📰 Intake Air Temp. Trim	

3.4 -NEW-	<b>#</b> 33
🗗 [F1] Axis Setting	
🐴 [F2] Conversion Table	
🐴 [F3] Fuel Control	
🗗 [F3] Fuel Map 1	
🐴 [F3] Fuel Map 2	
🐴 [F3] Fuel Map 3	
🐴 [F3] Fuel Cut	
🗗 [F4] A/F	
🐴 [F5] Ignition Control	
🞒 [F5] Ignition Map 1	
💾 [F5] Ignition Map 2	
🗗 [F6] ISC	
🖪 [F7] Boost	
🖪 [F8] Valve Timing	
🗗 [F9] Option Output	
Sub Map 4	
ET Option Map 1	
Option Map 2	
Option Map 3	
Option Map 4	
🗺 Water Temp. Trim	

Throttle Trim Man

₩ Intake Air Temp. Trim ₩ Port Irim ₩ Main Close Angle Time Trim ₩ Sub Close Angle Time Trim

### ■ Intake Air Temperature Map This map is to adjust the ignition timing based on the intake air temperature.

	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120	130
0.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.61	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

This map is to adjust the ignition timing by the intake air temperature and pressure. If the intake air temperature exceed  $70^{\circ}$ C, the ignition timing can be delayed with this map, but it is recommended to improve the vehicle's conditions by upgrading the intercooler, etc. High intake air temperature may induce knocking due to the difference in air density, which is hazardous to a vehicle.

#### ■ Speed Trim Map

₩ -NEW- 🕂 🖾	0.0	0.0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500 0.0	6000	6500 0.0	7000	7
🖫 [F1] Axis Setting	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	U 0
[F2]Conversion Table	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
[F3]Fuel Control	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
🖫 [F3] Fuel Map 1	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
[F3]Fuel Map 2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
[F3]Fuel Map 3	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ŭ
🖫 [F3] Fuel Cut	140.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	. 0
[F4]A/F	160.0	0.0	Para	meter Setti	ng												
[F5]Ignition Control	180.0	0.0		Basic		_						inition 2					
[F5]Ignition Map 1	200.0	0.0		Crankshaft	/Camsha	ft					ų		2				
LF5]Ignition Map 2	220.0	0.0	- 1 <b>4</b> 1	Input Sett			Ignition	Cut RPI									
🖫 [F6] ISC	240.0	0.0		– Voltage – Throttk				No	ormal	20000 [r	pm]		Car	Speed	20000	[rpm]	
[F7]Boost	260.0	0.0		Pressur				St	art	20000 [r	[mq						
[F8]Valve Timing	280.0	0.0		- Others			¥	0 (0.									
[F9]Option Output	300.0	0.0		Switch			Ignition	Cut (Sta					а Го	.1			
				- Frequer - A/F - Kr						eed Puls	e Numb		0 [Coun	u			
			- L	Output Se				RPM	Trim				0 [rpm]				
)Sub Map 1				Voltage				Trim				0.	0 [degre	e]			
)Sub Map 2				Frequer				Hold	Time				0 [msec	1			
)Sub Map 3				- Switch - Switch				11010					C LINDO O				
Sub Map 4				Switch			Knock Ir	ntegratio	n Trim								
Option Map 1				- Switch	(LSH2)		Using		No no - I k	se 🔿 Us							
Uption Map 2				Switch	(HS)		-										
Option Map 3			1	Fuel Fuel 1			Start	Knock Ir	ntegratio	n 30000							
Option Map 4				-Fuel 2			Option	Talas									
Water Temp. Trim				Twin In	jector		Option	Irim		V auto			Axis		1		
Intake Air Temp. Trim			44	Ignition						X Axis		r	AXIS		LINKE	ed Condit	lion
Port Trim				- Ignition			Option '		RPM			Speed		I	Permane	nt	
Main Close Angle Time Trim				ISC			Option -	Frim 2	OFF			OFF			ermane	*	_
Sub Close Angle Time Trim				ISC			Option	Trim 3	OFF		-	OFF		- I	Permane	nt	
			41	Other Con			Option	Trim 4	OFF		•	OFF		- 1	Permaner	nt	
				– Anti-La – Boost	9		-,										
			-	Naming Se	ttings												
			1	Error													
			- L	Memo													

To use the ignition timing map based on the vehicle speed, select "RPM" for X-axis and "Speed" for Y-axis of Option Trim of Ignition 2 under Parameter Setting as shown above.

✓     ✓ </th <th colspan="5">PPT Option Map 1         Option Map 2         Option Map 3         Option Map 4         PPT Intake Air Temp. Trim         PPT Port Trim         PPT Main cross Angle Time Trim</th> <th colspan="11">this hidp as required.</th> <th>е</th>	PPT Option Map 1         Option Map 2         Option Map 3         Option Map 4         PPT Intake Air Temp. Trim         PPT Port Trim         PPT Main cross Angle Time Trim					this hidp as required.											е
[F5]Ignition Control     [F5]Ignition Map 1     [F5]Ignition Map 2     [F5]Ignition Map 2     [F6]ISC     [F6]ISC	1 2 3	0 0.0 0.0 0.0 0.0	500 0.0 0.0 0.0 0.0	1000 0.0 0.0 0.0 0.0	1500 0.0 0.0 0.0 0.0	2000 0.0 0.0 0.0 0.0	2500 0.0 0.0 0.0 0.0	3000 0.0 0.0 0.0 0.0	3500 0.0 0.0 0.0 0.0	4000 0.0 0.0 0.0 0.0	4500 0.0 0.0 0.0 0.0	5000 0.0 0.0 0.0 0.0	5500 0.0 0.0 0.0 0.0	6000 0.0 0.0 0.0 0.0	6500 0.0 0.0 0.0 0.0	7000 0.0 0.0 0.0 0.0	7500 0.0 0.0 0.0 0.0
<ul> <li>[F7]Boost</li> <li>[F8]Yalve Timing</li> <li>[F9]Option Output</li> </ul>	5 6 7 8	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0

3.4 -NEW-	<b>P</b> (
🐴[F1]Axis Setting	
🞒 [F2] Conversion Table	
🞒 [F3] Fuel Control	
🞒 [F3] Fuel Map 1	
🞒 [F3] Fuel Map 2	
🞒 [F3] Fuel Map 3	
🞒 [F3] Fuel Cut	
🐴 [F4] A/F	
🞒 [F5] Ignition Control	
🐴 [F5] Ignition Map 1	
🗐 [F5] Ignition Map 2	
A [F6]1SC	
🞒 [F7] Boost	
🐴 [F8] Valve Timing	
🞒 [F9] Option Output	

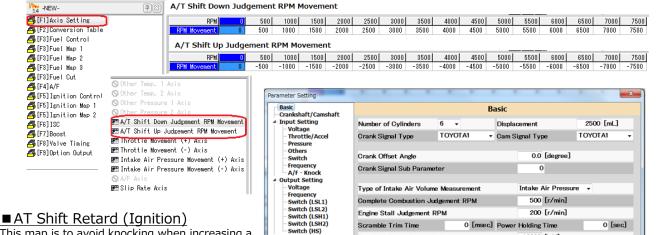
🖭 Acceleration Trim 📰 Acceleration Trim Time Decemention Trim 📰 Deceleration Trim Time 📰 A/T Shift Trim 📰 A/T Shift Trim Time

#### **Acceleration Trim Map**

	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ac	celera	tion T	rim Ti	me Ma	ар											
RPM	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

■ Acceleration Trim Map

Acceleration Trim Map can be also used for the ignition timing adjustment like the fuel injection adjustment.



Fuel 1

Fuel 2

ISC

Twin Injecto Ignition

Ignition 1 Ignition 2

# This map is to avoid knocking when increasing a

■ AT Shift Cut (Fuel) If the unwanted impact occurs when shifting a gear of automatic transmission, A/T Shift Cut is effective. Enter 50[msec] to A/T Shift Cut to perform fuel cut for 0.05 second to reduce the impact occurs during shifting a gear.

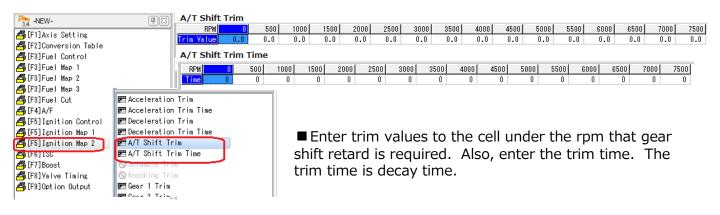
turbo engine /automatic transmission vehicle's boost by EVC or a similar device, and shifting up a gear with the throttle wide open during high engine rpm and high load. This map avoids knocking that may occur when shifting down a gear. The maps shown below are for AT shift retard during shifting-up.

nshaft				Ba	asic						
	Number of Cylinders	6 -			Displa	ement		250	10 [r	nL]	
cel	Crank Signal Type	TOYO	TA1	•	Cam S	ignal Typ	)e	тоүс	DTA1		•
							r. 1				
	Crank Offset Angle					0.0	[degree]				
	Crank Signal Sub Paramet	er				0					
	Type of Intake Air Volume	Measu	ireme	ent		Intake /	Air Pressure	• •			
L)	Complete Combustion Jud	gemen	t RPN	NI .		500	[r/min]				
2) 1)	Engine Stall Judgement R	РМ				200	[r/min]				
2)	Scramble Trim Time		0	[msec]	Power	Holding	Time		0	[sec]	
	Standard Power Supply V	oltage				12000	[mV]				
r	Fuel Cut Throttle		2.0	[%]	Fuel C	ut Accel	Position		2.0	[%]	
	Throttle Tangent Calibrat	ion Sar	nple '	Time		50	[msec]				
	A/T Shift Up/Down Throt	tle Cor	ditio	n		100.0	[%]				

To avoid knocking that occurs when shifting up a gear of automatic transmission,

A/T Shift Down Judgement RPM Movement map is required. This map is to recognize the engine rpm drop. Enter the engine rpm that can be recognize the engine rpm drop referring to the data log and/or data monitor.

Also, enter a throttle full opening angle to of "A/T Shift Up/Down Throttle Condition" Basic under Parameter Setting. For example, 70% - 70% of the throttle full opening angle is recognized as a full opening angle.



Basic Crankshaft/Camshaft	Fuel 2
✓ Input Setting	A/F Feedback Setting
- Voltage	A/F1 Feedback Map OFF -
Throttle/Accel	A/F 2 Feedback Map OFF
- Pressure - Others	
Switch	Start Time 150 [sec] Cycle Time 50 [msec]
Frequency	
A/F - Knock	Throttle Condition 90.0 [%]
Output Setting	Water Temp. Low 70 [deg-C] Water Temp. High 90 [deg-C]
Voltage	
Frequency	Fuel Cut Condition Selection
- Switch (LSL1) - Switch (LSL2)	RPM Intake Air Pressure
Switch (LSH1)	Air Flow Volume
Switch (LSH2)	
Switch (HS)	Deceleration Cut
▲ Fuel	Car Speed Condition 0.0 [km/h] Return Trim Coefficient 0.0 [%]
Fuel 1	Start Delay Time 500 [msec]
Fuel 2	
	A/T Shift Fuel Cut Time 50 [msec]
Ignition 1	
Ignition 2	Option I rim

#### ■ Parameter Setting - Basic

Basic Crankshaft/Camshaft			Basic						
<ul> <li>Input Setting</li> <li>Voltage</li> </ul>	Number of Cylinders	Number of Cylinders 6 - Displace							
Throttle/Accel	Crank Signal Type	TOYOTA1	▼ Cam S	ignal Type	TOYOTA1 -				
- Others - Switch	Crank Offset Angle			0.0 [degree]					
Frequency A/F - Knock	Crank Signal Sub Parame	eter		0					
<ul> <li>Output Setting</li> <li>Voltage</li> </ul>	Type of Intake Air Volum	e Measurement		Intake Air Pressum	3 ▼				
<ul> <li>Frequency</li> <li>Switch (LSL1)</li> </ul>	Complete Combustion Ju	udgement RPM		500 [r/min]					
	Engine Stall Judgement I	RPM	200 [r/min]						
- Switch (LSH2) - Switch (HS)	Scramble Trim Time	0 [mse	c] Power	Holding Time	0 [sec]				
4 Fuel	Standard Power Supply 1	Voltage	12000 [mV]						
- Fuel 1 - Fuel 2 - Twin Injector	Fuel Cut Throttle	2.0 [%]	Fuel C	ut Accel Position	2.0 [%]				
<ul> <li>Ignition</li> <li>Ignition 1</li> </ul>	Throttle Tangent Calibra	tion Sample Time		50 [msec]					
Ignition 2	A/T Shift Up/Down Thro	ttle Condition		100.0 [%]					
ISC ▲ Other Control	Output Function 1			LSH 11,12 Enabled					
- Anti-Lag Boost	Output Function 2			LSH 1,2 Enabled	-				

- Crank & Cam Signal Type: Usually appropriate signal type is entered after selecting the base engine except for special cases such as NB#C or AE86.
- Crank Offset Angle: The initial crank angle is adjusted on the computer. Default setting is "0".
- Crank Signal Sub Parameter: This item is required for cylinder discrimination when Crank Signal Type is "NISSAN1"; otherwise, this item is not required to set. 6-cylinder=22°, 4-cylinder=14°, 4-cylinder distributor=8°. For overrun prevention for Nissan, add or subtract "1" after modifying the switch wiring.
- Type of Intake Air Volume Measurement: Load is measured based on the type selected for this item. (The vertical axis of a map is determined.)
- Complete Combustion Judgement RPM: The engine rpm increase during cranking is monitored, and operation mode is switched between the engine start and standard driving based on the input RPM.
- Engine Stall Judgement RPM: When the rpm drops from the standard driving mode, the operation mode is switched.
- Scramble Trim Time: The operation time of scramble correction.
- Power Holding Time: Power source for F-CON Vpro or ECU relay is kept by a constant power supply for the set time after ignition is off.
- Fuel Cut Throttle & Fuel Cut Accel Position: Maps become effective or not based on this throttle angle. The standard value to input is "2.0". Make sure to enter a proper value. If "0" is entered, the deceleration fuel cut cannot be performed, and other malfunctions may occur. For an electronic control throttle vehicle, if Deceleration Fuel Cut Map cannot be activated when the throttle angle is less than Fuel Cut Throttle angle (accelerator opening angle is 0%, but throttle motor opening angle is 3% or more), entering an accelerator position signal enables Fuel Cut Accel Position so the deceleration fuel cut can be performed.
- Throttle Tangent Calibration Sample Time: The throttle variation is recognized based on the set period. The set period is the sampling time to determine the throttle variation for Non Phase Injection Time map or Acceleration Trim map.
- A/T Shift Up/Down Throttle Condition: Acceleration condition of AT vehicle is defined. Refer to AT Shift on page 28.
- Output Function 1: Select LSH11/12 (ground control) or Ignition Port 7/8. (Terminal No.37/38)
- Output Function 2: Select LSH1/2 (ground control) or Voltage Output 3/4. (Terminal No.43/44)

# ■ Parameter Setting - Voltage

There are 3 types of voltage input setup. The items available for each type are shown below. Refer to the manual of hardware and software for more details.

Basic Crankshaft/Camshaft			Volta	ige	
Input Setting	-Option Voltag	e Input [Type1]		Option Voltag	ge Input [Type2]
Voltage Throttle/Accel	#1 PIN 14	Intake Air Pressure	;	#9 PIN 52	Pull-Up Water Temp.
Pressure Others Switch	#2 PIN 21	AirFlow_1	•		🗌 Pull-Up
Frequency A/F - Knock	#3 PIN 9	OFF	<b></b>	#10 PIN 39	Intake Air Temp.
Output Setting Voltage	#4 PIN 15	OFF	•	#11 PIN 23	Pull-Up OFF
Frequency Switch (LSL1) Switch (LSL2) Switch (LSH1)	Fuel GCC #5 PIN 16 Ignition GCC	OFF	•	#12 PIN 24	Pull-Up OFF
Switch (LSH2) Switch (HS)					
Fuel Fuel 1 Fuel 2					
Twin Injector				Option Voltas	ge Input [Type3]
Ignition 1		OFF		#15 PIN 20	Throttle1 1
Ignition 2 ISC	Air Flow Type	OFF	-	#16 PIN 61	OFF
ISC				#101 III OI	
Other Control					
- Anti-Lag Boost					
Naming Settings					
Error					

Option Voltag	e Input [Type1]	
#1 PIN 14	Intake Air Pressure	
#2 PIN 21	AirFlow_1	•
#3 PIN 9	OFF	-
	OFF	-
#4 PIN 15	AirFlow_1 AirFlow 2	
	Fuel Pressure	
#5 PIN 16	Oil Pressure	
	Atmosphere_Pressure	
	Other_Pressure_1	
	Other_Pressure_2	
	External_A/F1 External_A/F2	
	External_Knock_1	=
	External_Knock_2	
	02_1	
	02_2	
Air Flow Type	Fuel_Trim	
	Ignition_Trim Fuel Sub Trim	
	Ignition Sub Trim	
	Ignition_Cut_RPM	
	Fuel_Gauge	
	РТО	-

Option Voltage	Input [Type2]
	🗆 Pull-Op
#9 PIN 52	Water Temp.
	Pull-Up
#10 PIN 39	
#10 FIN 35	Intake Air Temp.
	Pull-Up
#11 PIN 23	OFF •
	Pull-Up
#12 PIN 24	OFF 🗾
	OFF
	Fuel_Temp.
	Oil_Temp.
	Exhaust_Temp.
	Other_Temp1
	Other_Temp2
	Fuel_Trim
Option Voltage	
#15 PIN 20	Fuel_Sub_Trim
	Ignition_Sub_Trim
#16 PIN 61	Ignition_Cut_RPM
	Fuel_Gauge
	PTO
	STEP_Motor_Position

Option Voltag	e Input [Type3]
#15 PIN 20	Throttle1_1
#16 PIN 61	OFF 🔹
	OFF
	Throttle_1-2
	Throttle_2-1
	Throttle_2-2
	Accel_1
	Accel_2
	Other_Position_1
	Other_Position_2
METER	Fuel_Trim
	_Ignition_Trim
	Fuel_Sub_Trim
	Ignition_Sub_Trim
	Ignition_Cut_RPM
	Fuel_Gauge
	РТО
	STEP_Motor_Position

■ Parameter Setting – Fuel 1 Basic setting for fuel control. Fuel control by input load should be set in this menu.

For the V-shaped engines, use "Fuel Group Distribution" to control fuel for each bank.

- Basic - Crankshaft/Camshaft					Fuel 1					
Input Setting	Fuel Control T	ype			Fuel	Group Di	stribution			
- Voltage Throttle/Accel	Port 1	Main :	x1 🗸			Port 1	Group 1		-	
Pressure	Port 2	Main :	x1 🗸			Port 2	Group 1		-	
Others	Port 3	Main :	×1 +			Port 3	Group 1		•	
- Switch Frequency	Port 4	Main :	×1 👻			Port 4	Group 1		-	
A/F - Knock	Port 5	OFF	-			Port 5	Group 1		-	
Output Setting	Port 6	OFF	•			Port 6	Group 1		-	
- Voltage Frequency		OFF	•			Port 7	Group 1		-	
- Switch (LSL1) - Switch (LSL2)		OFF	•			Port 8	Group 1		-	
Switch (LSH1) Switch (LSH2)	Injector Coeffici	ient	12800000		Fuel	Coefficien	t	1.000	[%]	
Switch (HS)	Injector Volume		Main	500	[mL/mi	nl	Sub	0	[mL/	/mii
Fuel 1	First Injection T	ime		0	[usec]					
Fuel 2 Twin Injector	Air Conditioner	Trim	Trim Value	0.0	[%]	Decrem	ent Coeffi	cient	100	[%]
Ignition	Load 1 Trim		Trim Value	0.0	[%]	Decrem	ent Coeffi	cient	100	[%]
Ignition 1 Ignition 2	Load 2 Trim		Trim Value	0.0	[%]	Decrem	ent Coeffi	cient	100	[%]
ISC ISC	Load 3 Trim		Trim Value	0.0	[%]	Decrem	ent Coeffi	cient	100	[%]
Other Control	Load 4 Trim		Trim Value	0.0	[%]	Decrem	ent Coeffi	cient	100	[%]
- Anti-Lag Boost	Define Sub Map	1	OFF		-					

■ Fuel Control Type Port 1 – 8: in Fuel 1 shown above, "Main x 1" is selected for Port 1 to 4; this setting is for 4-cylinder sequential injection. Fuel is injected once during one cycle (720°). If "Main x 2" is selected under simultaneous injection, fuel is injected twice during one cycle (720°). The number of fuel injection per cycle is determined depending on which mode or map is effective, the twin injector mode or Independent Injection Map for "Sub x #" and "Independent x #" as well.

■ Injector Coefficient: Fuel injection amount for L-Jetronic is determined. Default value is 12800000; increasing this value increases the fuel volume.

■ Air Conditioner Trim • Load Trim 1, 2, 3, 4: Refer to the relevant sections explain these items in this document.

■ Define Sub Map: Select and fix a sup map to use if necessary. To use a map that uses MIX-CONT, select "Volume Selection".

■ Fuel Group Distribution: Select "Group 1" or "Group 2" to trim values by a group.

#### ■ Group Trim (Fuel)

Group Trim is performed for the map made as "Group 1 Trim" and "Group 2 Trim" under Fuel Map 3.

<sup>7</sup> ‰ -NEW- 平( ▲ [F1]Axis Setting	Gro	oup 1 Trin	ı														
🐴 [F2] Conversion Table		0 500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	
🚭 [F3] Fuel Control 📃 🚺	.20 0	.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	.98	Group 2 T	rim <u>.0</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	.14				arameter Se	tting	- 22										×
			0 500		Basic							Fu	el 1				
		0.20 0.0			<ul> <li>Cranksha</li> <li>Input Se</li> </ul>	ft/Camsha	aft	Eucl Co	ntrol Typ	-			Fuel Gr	un Dietz	Ibution		
🗗 [F6] ISC 🔢 📊		0.36 0.1			Voltag												
🐴 [F7] Boost 🔢 🗍		0.67 0.1				tle/Accel				ain x1	•				oup 1	•	
🐴 [F8] Valve Timing 🛛 🛛 🖉		0.83 0.0			- Pressu - Other					ain x1	•				oup 1	•	
🗗 [F9] Option Output 🛛 🛛 2		0.98 0.1	-		Switc					ain x1 ain x1	•				oup 1	•	
2		1.14 0.0			- Freque				JIC I	ain x1 ain x1	•				oup 1	•	
Acceleration Trim		1.29 0.0	-	(	■ A/F = ■ Output S				JIC U	ain x1 ain x1	•				oup2	-	
Acceleration Trim Time		1.45 0.1	0.0	(	- Voltag	je –					•				oup2	•	
E Acceleration Trim Time		1.61 0.0	0.0	(	- Frequ	ency h (LSL1)			sie r		•				oup I	•	
EDeceleration Trim Time		1.76 0.0	0.0	(		h (LSL2)		Р	ort 8 OI	••	-		Р	ort 8 Gr	oupl	<u> </u>	
R Deceleration Trim Time R Acceleration Trim Water Tem		1.92 0.0		(		h (LSH1)		Injector (	oefficier	nt 12	300000		Fuel Coet	ficient	1	.000 [%]	
m Start Fuel Trim		2.07 0.1		(	Switc	h (LSH2) h (HS)		Injector \	/olume	h	fain	500 [r	mL/min]		Sub	O [mL	/min]
mistart Fuel Trim Time		2.23 0.1			4 Euol			First Inie					secl				
🛇 Scramble Trim		2.54 0.1			Fuel 1					im Trim	Value	0.0 0		crement	Coefficier	# 100	[%]
📰 Gear 1 Trim						Injector		Load 1 T		Trim	_	0.0 0			Coefficier		5 [%]
📰 Gear 2 Trim					- Igniti							0.0 0	-				
Gear 3 Trim					Ignition → Ignition	on 2		Load 2 T		Trim			-		Coefficier		[%]
E Gear 4 Trim					- ISC			Load 3 T	rim	Trim	Value	0.0		ecrement	Coefficier	nt 100	[%]
📰 Gear 5 Trim 🎟 Gear 6 Trim								Load 4 T	rim	Trim	Value	0.0	6] D	ecrement	Coefficier	nt 100	[%]
men Gear 6 Irim Magaar 7 Trim					Boost			Define Su	ıb Map	OFF		•					
E Gear / Trim					-Naming S	ettings											
Group 1 Trim					- Error Memo												
F Group 2 Trim																	
anoup z mini				ſ	PRINT	100	ompariso	n Paramete	r 😑 C	ONNECTO	R 👔 SEI	ND PARA	METER			к 🗙	CANCE

# ■ Parameter Setting – Fuel 2 "A/F Feedback"

Basic       Fuel 2         Crankshaft/Camshaft       A/F Feedback Setting         Input Setting       A/F 1 Feedback Map         Others       A/F 2 Feedback Map         Switch       Start Time         Output Setting       Throttle/Accel         Voltage       A/F 1 Feedback Map         Output Setting       Voltage         Voltage       Throttle Condition         Switch       Start Time         Switch (ISL1)       Water Temp. Low         Switch (ISL2)       Fuel Cut Condition Selection         Switch (ISH2)       A/F 1 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.         Fuel       A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         BA/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         BA/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         BA/F 5 Start Time: Set the warm-up time.         BA/F Cycle Time: Set a period of time to monitor the A/F value change. <th>Parameter Setting</th> <th>10</th> <th>MA MA MA</th> <th>1.0 L.0</th> <th></th> <th></th> <th>×</th>	Parameter Setting	10	MA MA MA	1.0 L.0			×
<ul> <li>Input Setting <ul> <li>Voltage</li> <li>Throttle/Accel</li> <li>Pressure</li> <li>Others</li> <li>Switch</li> <li>Frequency</li> <li>A/F - Knock</li> </ul> </li> <li>Output Setting <ul> <li>Voltage</li> <li>Frequency</li> <li>A/F - Knock</li> </ul> </li> <li>Output Setting <ul> <li>Voltage</li> <li>Frequency</li> <li>A/F - Knock</li> </ul> </li> <li>Output Setting <ul> <li>Voltage</li> <li>Frequency</li> <li>A/F - Knock</li> </ul> </li> <li>Output Setting <ul> <li>Voltage</li> <li>Frequency</li> <li>Switch (LS11)</li> <li>Switch (LS12)</li> </ul> </li> <li>Switch (LS12)</li> <li>Sw</li></ul>		aft			Fuel 2		
Throttle/Accel       Pressure         Others       A/F 2 Feedback Map         Switch       Frequency         A/F - Knock       Throttle Condition         Output Setting       Voltage         Frequency       Fuel         Switch (LSL1)       Switch (LSL2)         Switch (LSL2)       Switch (LSL2)         Switch (LSL2)       Switch (LSL2)         Switch (LSL2)       A/F 1 Feedback Map: Select ion         Switch (LSL2)       A/F 2 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Start Time: Set the warm-up time.         A/F Cycle Time: Set a period of time to monitor the A/F value change.         A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle	1 · · ·	arc	A/F Feedback Set	ting			
Pressure       A/F 2 Feedback Map       OFF         Others       Switch       Start Time       150 [sec]       Cycle Time       50 [msec]         Switch       A/F - Knock       Throttle Condition       90.0 [%]       Water Temp. High       90 [deg-C]         Voltage       Frequency       Water Temp. Low       70 [deg-C]       Water Temp. High       90 [deg-C]         Switch (LSL1)       Switch (LSL2)       Fuel Cut Condition Selection       Air Elow Values       Air Elow Efficience         Switch (LSH1)       Switch (LSH2)       Air Elow Values       Air Elow Efficience       Air Elow Efficience         Switch (LSH2)       A/F 1 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.       A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         Fuel       Fuel 2       A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.         A/F Cycle Time: Set a period of time to monitor the A/F value change.       A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle			A/F	1 Feedback Map	Main Trim		
Switch       Start Time       150 [sec]       Cycle Time       50 [msec]         Frequency       A/F - Knock       Throttle Condition       90.0 [%]       Intake Air Pressure         Voltage       Frequency       Fuel Cut Condition Selection       Intake Air Pressure         Switch (LSL1)       Switch (LSL2)       Intake Air Pressure         Switch (LSH2)       Switch (LSH2)       A/F 1 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.         Fuel       Fuel       A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         A/F Cycle Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.         A/F Cycle Time: Set a period of time to monitor the A/F value change.         A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle			A/F	2 Feedback Map	OFF		
Frequency       A/F - Knock         Output Setting       Voltage         Frequency       Switch (LSL1)         Switch (LSL2)       Fuel Cut Condition Selection         Switch (LSL2)       Fuel Cut Condition Selection         Switch (LSL2)       A/F 1 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.         Fuel       A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.         Indition       A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.         A/F Cycle Time: Set a period of time to monitor the A/F value change.         A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle			Start Time	150 [		la Tima	50 [maga]
<ul> <li>A/F - Knock</li> <li>Output Setting</li> <li>Voltage</li> <li>Frequency</li> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH2)</li> <li>S</li></ul>					ij Cyc	ie i ime	ou [msec]
<ul> <li>Voltage         <ul> <li>Frequency</li> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> </ul> </li> <li>Fuel 1         <ul> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Ignition 1             <li>Ignition 2</li> <li>ISC</li> </li></ul> </li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Fuel 2</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Fuel 2</li> <li>Fuel 2</li> <li>Fuel 2</li> <li>Fuel 2</li> <li>Fuel 3</li> <li>Fuel 4</li> <li>Fuel 4</li> <li>Fuel 5</li> <li>Fuel 5</li> <li>Fuel 6</li> <li>Fuel 7</li> <li>Fuel 7</li> <li>Fuel 8</li> <li>Fuel 9</li> <li>Fuel 1</li> <li>Fuel 1</li> <li>Fuel 2</li> <li></li></ul>	A/F - Knock		I hrottle Conditio	on 90.0 [%]			
<ul> <li>Frequency</li> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH1)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> <li>A/F 1 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.</li> <li>A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.</li> <li>A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.</li> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.</li> <li>A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>	1 a a *		Water Temp. Lov	v 70 [deg	r-C] Wate	er Temp. High	90 [deg-C]
<ul> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH1)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> <li>Fuel</li> <li>Fuel</li> <li>Fuel</li> <li>Fuel</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Ignition 1</li> <li>Ignition 2</li> <li>ISC</li> <li>RPM</li> <li>Intake Air Pressure</li> <li>Air Elow Values</li> <li>Air Elow Efficiency</li> <li>Air Elow Eff</li></ul>			Fuel Cut Condition	Selection			
<ul> <li>Switch (LSH1)</li> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> <li>Fuel</li> <li>A/F 2 Feedback Map: Select a map to reflect data when fuel is adjusted to make th measured A/F closer to a target A/F by the A/F feedback.</li> <li>A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.</li> <li>A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.</li> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.</li> <li>A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>						Intake Air Pre	essure
<ul> <li>Switch (LSH2)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> <li>Fuel</li> <li>A/F 2 Feedback Map: Select a map to reflect the fuel trim value from the second system of the V-type engine.</li> <li>A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.</li> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.</li> <li>A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>				Air Flow Vo	lumo 🔽	Air Flow Effic	lanev
<ul> <li>Fuel</li> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Ignition 1</li> <li>Ignition 2</li> <li>ISC</li> <li>A/F Cycle Time: Set the warm-up time to monitor the A/F value change.</li> <li>A/F Cycle Time: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>							adjusted to make the
<ul> <li>Fuel 1</li> <li>system of the V-type engine.</li> <li>A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.</li> <li>Ignition 1</li> <li>Ignition 2</li> <li>ISC</li> <li>ISC</li> <li>ISC</li> <li>ISC</li> </ul>							for the second
<ul> <li>Twin Injector</li> <li>Ignition</li> <li>Ignition 1</li> <li>Ignition 2</li> <li>ISC</li> <li>A/F Start Time: Set the warm-up time. A/F feedback is not performed during the warm-up time.</li> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.</li> <li>A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>		-	•		reflect the fl	Jei trim value	e from the second
<ul> <li>Ignition         <ul> <li>Ignition 1</li> <li>Ignition 2</li> </ul> </li> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.         <ul> <li>A/F Cycle Time: Set a period of time to monitor the A/F value change.</li> </ul> </li> <li>A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle</li> </ul>			,,	•	e. A/F feedt	back is not be	rformed during the
■ A/F Throttle Condition: Set the throttle opening angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle							
<b>ISC</b> When the throttle angle is less than the set angle. A/F feedback is performed when the throttle angle is less than the set angle. For example, under Throttle							
• • Other Control Condition shown above, A/F regulack won't be performed when the through angle is					-		
Anti-Lag 100% (more than 90%).				•	ont be pend	ormed when i	the throttle angle is
<b>Boost</b> $\blacksquare$ A/F Water Temp. Low / High: A/F feedback is performed between the set water	Boost		· /		dback is perf	formed betwe	een the set water
Naming Settings Error Error							
Memo $70^{\circ}$ C and $90^{\circ}$ C.		70℃ a	and 90℃.	-			

To use the A/F feedback function, input 0 to 100 to the A/F Feedback Flag. The number is 10 times feedback speed (10 means 100 times feedback speed). "10" is the standard feedback speed.

7ho -NEW- 무응	A/F F	eedbac	k Flag																_		
🞒 [F1] Axis Setting	-	0	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250		
🐴 [F2]Conversion Table	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
🞒 [F3] Fuel Control	0.28	Ō	Ů	Ŭ	Ů	ů.	0	ů Ú	Û	ů.	ů –	ů.	ů –	ů.	0	0	ů –	ů.	0		
🞒 [F3] Fuel Map 1	0.36		Ŭ	Ū.	Ŭ	0	0	Ū.	Ŭ	0	0	0	0	Ŭ.	0	0	Ū.	Ŭ.	0		
🞒 [F3] Fuel Map 2	0.44		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
🞒 [F3] Fuel Map 3	0.52		0	0	A/F	Man	-									-					
ES]Fuel_Cut	0.60	0	0	0	- А/Г	чар	0.000	500	750	4000	40501	4500	4750	00001	oorol	05001	07501	00001	00501	orool	oppol
🗗 [F4] A/F	0.68	0	0	0	0.00	U	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750
Antrojignition Control	0.76	0	0	0	0.20	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
🐴 [F5] Ignition Map 1	0.85	0	0	0	0.28	13.90	13.90	13.90 13.81	13.90	13.90 13.81	13.90	13.90	13.90	13.90 13.81	13.90	13.90	13.90	13.90	13.90	13.90	13.90
🐴 [F5] Ignition Map 2	0.93	0	0	0	0.36	13.81	13.81 13.71	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
🐴 [F6] ISC	1.01		0	0	0.44	13.71	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.61	13.71	13.71 13.61	18.71	13.71	13.61	13.61	13.61
A [F7]Boost	1.09		0	0	0.60	13.61	13.51	13.52	13.51	13.51	13.51	13.52	13.52	13.51	13.52	13.51	13.51	13.51	13.52	13.52	13.51
🐴 [F8] Valve Timing	1.17		0	0	0.68	13.42	13.32	13.42	13.42	13.32	13.42	13.42	13.32	13.42	13.42	13.42	13.42	13.42	13.42	13.42	13.42
🗗 [F9] Option Output	1.25		0	0	0.00	13.42	13.42	13.32	13.32	13.42	13.42	13.32	13.42	13.32	13.32	13.32	13.42	13.32	13.32	13.32	13.32
- pojoperon osepse	1.33	-	0	0	0.76	13.32	13.32	18.23	13.32	13.32	13.23	13.23	13.32	13.32	13.23	13.23	13.32	13.23	13.23	13.23	13.32
	1.41	0	0	0	0.93	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13
📰 A/F Map	1.49		0	0	- 1.01	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03	13.03
🕅 A/F Feedback Flag	1.57		0	0	1.01	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94	12.94
📰 A/F Feedback Irim 1	1.65		0	0	1.17	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84
🕿 A/F Feedback Trim 2	1.73		0	0	1.25	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74	12.74
🗺 A/F Short Term Feedback Trim	1.81		0	0	1.33	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65
🗺 A/F Short Term Feedback Trim	1.89		0	0	1.41	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55
🗺 A/F Feedback Trim MAX	1.97		0	0	1.49	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45
# A/F Feedback Swing Coefficien	2.05		0	0	1.57	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35
# A/F Feedback Swing Cycle	2.14		0	0	1.65	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26
	2.30		0	0	1.73	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16
	2.38		0	0	1.81	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06	12.06
	2.46		0	0	1.89	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97	11.97
	2.54		0	0	1.97	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87
	2.62		0	0	2.05	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77	11.77
	2.70		0	0	2.14	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68	11.68
1			v	v	2.22	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58	11.58
					2 30	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48	11 48

■ Parameter Setting – Ignition 1

Basic setting for the ignition control.

Ignition trim control by the load input should be set in this menu.

For the V-shaped engines, use "Fuel Group Distribution" to control fuel for each bank.

Ignition 1         Ignition Control Type         Poltage       Port 1       Main x1       Port 1       Group 1       Port 2       Group 1       Port 3       Group 1       Port 4       Port 3       Group 1       Port 4       Port 5       Group 1       Port 4       Port 5       Group 1       Port 4       Port 5       Port 5       Port 6       Port 6       Group 1       Port 6       Group 1       Port 6       Port 6       Group 1       Port 6       Port 6       Group 1       Port 6       Group 1       Port 6       Port 6       Port 1       Port 1       Port 6       Port 1       Port 6       Port 1       Port 6       Port 1       Port 6       Port 1       Port 1       Port 6       Port 1       Port 8       Port 1       Por	
Input Setting     Ignition Control Type     Ignition Group Distribution       Voltage     Port 1     Main x1     Port 1     Group 1     Port 2       - Throttle/Accel     Port 2     Main x1     Port 2     Group 1     Port 3       - Others     Port 3     Main x1     Port 4     Port 3     Group 1     Port 3       - Switch     Port 5     Main x1     Port 5     Group 1     Port 5       - A/F - Knock     Port 5     Main x1     Port 5     Group 1     Port 5       - Voltage     Port 6     Main x1     Port 5     Group 1     Port 6       - Voltage     Port 7     OFF     Port 7     Group 1     Port 8       - Switch (LSL2)     Port 8     OFF     Port 8     Group 1     Port 8	
- Throttle/Accel Port 1 Main x1 • Port 1 Group1 • Pressure Port 2 Main x1 • Port 2 Group1 • - Others Port 3 Main x1 • Port 3 Group1 • - Switch Port 4 Main x1 • Port 3 Group1 • - Frequency Port 4 Main x1 • Port 5 Group1 • - Voltput Setting Port 6 Main x1 • Port 6 Group1 • - Voltput Setting Port 6 Main x1 • Port 6 Group1 • - Switch (LSL2) Port 8 OFF • Port 8 Group1 •	
Pressure     Port 2     Main x1     Port 2     Group1       - Others     Port 3     Main x1     Port 3     Group1       - Switch     Port 4     Main x1     Port 3     Group1       - Frequency     Port 4     Main x1     Port 4     Group1       - A/F - Knock     Port 5     Main x1     Port 5     Group1       - Output Setting     Port 6     Main x1     Port 6     Group1       - Voltage     Port 7     OFF     Port 7     Group1       - Switch (LSL2)     Port 8     OFF     Port 8     Group1	
Switch     Port 3     Main X1     Port 3     Group1     V       - Frequency     Port 4     Main X1     Port 5     Group1     V       - A/F - Knock     Port 5     Main X1     Port 5     Group1     V       - Voltage     Port 6     Main X1     Port 6     Group1     V       - Frequency     Port 7     OFF     Port 7     Group1     V       - Switch (LSL2)     Port 8     OFF     Port 8     Group1     V	
Frequency     Port 4     Main x1     v     Port 4     Group1       -A/F - Knock     Port 5     Main x1     v     Port 5     Group1     v       • Output Setting     Port 6     Main x1     v     Port 6     Group1     v       - Voltage     Port 7     OFF     v     Port 8     Group1     v       - Switch (LSL2)     Port 8     OFF     Port 8     Group1     v	
A Output Setting     Port 6     Main x1     Port 6     Group1     Group1     Group1     Group1     Switch (LSL2)     Port 8     OFF     Port 8     Group1     Port 8     Port 8     Group1     Port 8     Po	
- Frequency Port 7 OFF - Port 7 Group1 - - Switch (LSL2) Port 8 OFF - Port 8 Group1 -	
-Switch (LSL2) Port 8 0FF - Port 8 Group1 -	
Switch (LSL2)	
-Switch (LSH2) Ignition Control Voltage 54 124	_
Switch (HS) Ignition Control Logic  Normal Reverse	
Fuel 1 Start Ignition Timing 0.0 [BTDC]	
Fuel 2 Deceleration Fuel Cut Time Out Coefficient 0.0 [%]	
Ignition     Air Conditioner Trim Trim Value     0.0 [degree]     Decrement Coefficient     100 [	¥]
Ignition 1 Ignition 2 Load 1 Trim Trim Value 0.0 [degree] Decrement Coefficient 100 [	×]
ISC Load 2 Trim Trim Value 0.0 [degree] Decrement Coefficient 100 [	×]
Other Control     Load 3 Trim     Trim Value     0.0 [degree]     Decrement Coefficient     100 [	×]
Anti-Lag Boost Load 4 Trim Trim Value 0.0 [degree] Decrement Coefficient 100 [	%]
Naming Settings Define Sub Map OFF	
- Error Define Sub wap Of T	

■ Ignition Control Type Port 1 – 8: Ignition 1 shown above is for 6-cylinder sequential ignition condition. "Main x 1" is selected for Port 1 to 6; under this setting, ignition is done once during one cycle (720°). For the simultaneous injection or group ignition system, select "Main x 2" to ignite twice during one cycle (720°). For 4-cylinder or distributor equipped engine, select "Main x 4" for Port 1.

■ Ignition Control Voltage: Set the control voltage for the ignitor equipped with a vehicle.

■ Ignition Control Logic: Select "Normal" except for some vehicles (HONDA, etc.).

■ Start Ignition Timing: Enter "0". If any value is entered, the ignition occurs less than Complete Combustion Judgement RPM according to the value entered here.

■ Air Conditioner Trim・Load 1,2,3,4 Trim: Refer to the section in this document explains these items.

■ Define Sub Map: Refer to the section in this document explains these items.

#### ■ Group Trim (Ignition)

Group Trim is performed for the map made as "Group 1 Trim" and "Group 2 Trim" under Ignition Map 2.

7hm -NEW- 🕂 🔅	Group 1 Trim Map				
🐴 [F1] Axis Setting		2000 Parameter Setting			×
🐴 [F2] Conversion Table		0.0 Basic		Ignition 1	
🐴 [F3] Fuel Control	0.36 0.0 0.0 0.0 0.0	0.0 Crankshaft/Camshaft			
A [F3]Fuel Map 1	0.51 0.0 0.0 0.0 0.0	0.0 / Input Setting	Ignition Control Type	Ignition Group Distribution	
🐴 [F3]Fuel Map 2	0.67 0.0 0.( Group 2 Trim Maj	D Throttle/Accel	Port 1 Main x1 -	Port 1 Group1	•
🐴 [F3]Fuel Map 3	0.83 0.0 0.0	- Pressure - Others	Port 2 Main x1 + Port 3 Main x1 +	Port 2 Group1 Port 3 Group1	-
🐴 [F3] Fuel Cut	0.00 0.0 0.0 0.0 0	UU IL Switch	Port 3 Main x1 v	Port 4 Group1	-
🐴 [F4] A/F	1.14 0.0 0.( 0.20 0.0 0.		Port 5 Main x1 +	Port 5 Group1	-
🞒 [F5] Ignition Control	1.29 0.0 0.( 0.36 0.0 0. 1.45 0.0 0.( 0.51 0.0 0.		Port 6 Main x1 -	Port 6 Group1	-
🞒 [F5] Ignition Map 1	1.40 0.0 0.0 0.0		Port 7 OFF	Port 7 Group1	-
🞒 [F5] Ignition Map 2	1.61 0.0 0.1 0.00 0.0	Switch (LSL1)	Port 8 OFF +	Port 8 Group1	
ALLER I ISC	1.76 0.0 0.1 0.0 0.0	onnear (court)	Ignition Control Voltage	© 5V © 12V	
🐴 [F7] Boost					
🐴 [F8] Valve Timing	2.07 0.0 0.1 1.14 0.0 0. 2.23 0.0 0.1 1.29 0.0 0.		Ignition Control Logic	Normal     Reverse	
🞒 [F9] Option Output	2.23 0.0 0.1 1.45 0.0 0.		Start Ignition Timing	0.0 [BTDC]	
	2.54 0.0 0.0 1.61 0.0 0.	0 0 Twin Injector	Deceleration Fuel Cut Time Out Co		
	2.04 0.0 0.1 1.76 0.0 0.	0 0 Ignition	Air Conditioner Trim Trim Value	0.0 [degree] Decrement Coefficient	100 [%]
R Acceleration Trim	1.92 0.0 0.	.0 01 Ignition 2	Load 1 Trim Trim Value	0.0 [degree] Decrement Coefficient	100 [%]
ET Acceleration Trim Time	2.07 0.0 0.	.0 0) - ISC	Load 2 Trim Trim Value	0.0 [degree] Decrement Coefficient	100 [%]
E Deceleration Trim	2.23 0.0 0.	0 0 4 Other Control	Load 3 Trim Trim Value	0.0 [degree] Decrement Coefficient	100 [%]
E Deceleration Trim Time	2.39 0.0 0.		Load 4 Trim Trim Value	0.0 [degree] Decrement Coefficient	100 [%]
🖭 A/T Shift Trim	2.54 0.0 0.	.0 0 Naming Settings	Define Sub Map OFF	•	
🕅 A/T Shift Trim Time	1	A Error Memo			
Scramble Trim					
Sknocking Trim		PRINT Compar	ison Parameter 📔 🖂 CONNECTOR 🛛 🏜 S	SEND PARAMETER	X CANCEL
📰 Gear 1 Trim					
📰 Gear 2 Trim					
📰 Gear 3 Trim					
📰 Gear 4 Trim					
🗺 Gear 5 Trim					
📰 Gear 6 Trim					
🖭 Gear 7 Trim					
F Gear 8 Trim					
E Group 1 Trim					
🗺 Group 2 Trim					
QKnocking Integration Trim					

Parameter Setting	14 84 1		10.0	- m.e.	×	
Basic Crankshaft/Camshaft			Ignition 2			
<ul> <li>Input Setting</li> <li>Voltage</li> <li>Throttle/Accel</li> <li>Pressure</li> </ul>		Mormal 20000 [rpm] tart 20000 [rpm]		Car Spe	ed 20000 [rpm]	
<ul> <li>Others</li> <li>Switch</li> <li>Frequency</li> <li>A/F - Knock</li> <li>Output Setting</li> <li>Voltage</li> <li>Frequency</li> <li>Switch (LSL1)</li> <li>Switch (LSL2)</li> <li>Switch (LSH1)</li> <li>Switch (LSH2)</li> <li>Switch (HS)</li> <li>Fuel</li> <li>Fuel</li> <li>Fuel 2</li> </ul>	RPM Trim Hold Knock Integrati Using @	e Over Speed Pulse Nur 1 Trim 1 1 Time	nber 10 0 0.0 0	[Count] [rpm] [degree] [msec]	Parameter Setting Ignition 2 Setting for the ignition cut rpm and option should be set in the menu	tion 1 trim
<ul> <li>Twin Injector</li> <li>Ignition</li> </ul>	Option min	X Axis	ΥA	xis	Linked Condition	
Ignition 1 Ignition 2	Option Trim 1	RPM 🗸	Speed		✓ Permanent ✓	
▲ ISC	Option Trim 2	OFF -	OFF		✓ Permanent ✓	
ISC Other Control	Option Trim 3	OFF -	OFF		✓ Permanent ✓	
- Anti-Lag - Boost - Naming Settings - Error - Memo	Option Trim 4	OFF •	OFF		▼ Permanent ▼	

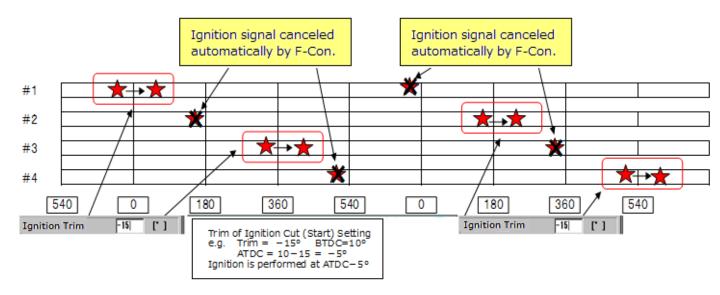
- Ignition Cut RPM Normal: The max rpm (ignition REV) under the normal driving mode.
- Ignition Cut RPM Car Speed: RPM to fix when the optional switch for the ignition cut speed is on.
- Ignition Cut RPM Start: The max rpm to fix when PROSTART function is activated.

#### Ignition Cut (Start) Setting

- Time Over Speed Pulse Number: Under PROSTART mode, the ignition cut continues if the speed pulse number is less than the number set here. 10 count= =10km(speed)→ the ignition is returned to the standard.
- Trim: See the diagram below:

■ Hold Time: Time period of ignition cut activated while the ignition conditions are not meeting Ignition Cut (Start) Setting conditions, and Hold Time is entered.

• Option Trim 1/2/3/4: Refer to the section in this document explains these items.



Parameter Setting - Twin Injector Select a Twin Injector Mode to control the primary and secondary injector.

Image: Second	0.20 360.0 0.36 360.0 0.51 360.0 0.67 360.0 0.83 360.0 0.98 360.0	360.0 360.0 360.0 360.0	360.0 360. 360.0 360. 360.0 360.	D 360.0 D 360.0 D 360.0 D 360.0	2500 360.0 360.0 360.0 360.0	3000 360.0 360.0 360.0 360.0	3500 360.0 360.0 360.0 360.0	4000 360.0 360.0 360.0 360.0	4500 360.0 360.0 360.0 360.0	5000 360.0 360.0 360.0 360.0	5500 360.0 360.0 360.0 360.0	6000 360.0 360.0 360.0 360.0	6500 360.0 360.0 360.0 360.0	7000 360.0 360.0 360.0 360.0	7500 360.0 360.0 360.0 360.0	X
[F3]Fuel Map 3     [F3]Fuel Cut     [F3]Fuel Cut     [F4]A/F     [F5]Ignition Control     [F5]Ignition Map 1     [F5]Ignition Map 2     [F5]Ignit	1.14 360.0 1.29 360.0 1.45 360.0 1.61 360.0 1.76 360.0 1.92 360.0 2.07 360.0	360. 360. 360. 360. 360. 360.	Basic Crankshaf Input Set Voltag Thrott Pressu	ting e e/Accel	ft	Twin Injector       Twin Injector Mode       OFF       OFF       Operation       Distribution       Distribution Map										
Forstand F73]Boost F8]Valve Timing F8]Option Output Standard Injection Time Injection Time at Start Mone Phase Injection Time	2.23 360. 2.39 360. 2.54 360.	360.	Switch Freque A/F - K Output So Voltag Freque Switch	- Switch - Frequency - A/F - Knock Output Setting - Voltage - Frequency - Switch (LSL1) - Switch (LSL2)			Twin Injector Trim Twin Injector Start RPM Twin Injector Return RPM Twin Injector Start Min. Injection Time Twin Injector Return Min. Injection Time							0.0 [%] 20000 [rpm] 20000 [rpm] 30000 [usec] 30000 [usec]		
፼⊞ Independent Injecton Time ፼⊞ Main Injector Dead Time g⊞ Sub Injector Dead Time				(LSH1) (LSH2) (HS)		Twin Injector Change Trim Valu Decreme							e 0.0 [%] ht Coefficient 0 [%]			
m Independent Injector Dead Tim m Standard Injection Timins Injection Timins Twin Injector			<ul> <li>Fuel 1</li> <li>Fuel 2</li> <li>Twin Injector</li> <li>Ignition 1</li> <li>Ignition 2</li> <li>ISC</li> <li>Other Control</li> <li>Anti-Lag</li> <li>Boost</li> <li>Naming Settings</li> <li>Error</li> <li>Memo</li> </ul>			Sub injector's volume must be entered to "Sub" of Injector Volume in Fuel 1 under Parameter Setting.										

- Twin Injector Mode: Select the operation mode for Fuel Control Type's each Port that "Sub x #" is selected in Fuel 1 under Parameter Setting for FC3S or FD3S. Parameter Setting shown above selected "Automatic Distribution" that injection is performed by 50% from main injector and another 50% from sub injector after the sub injector works first.
- Twin Injector Start RPM: Sub injector starts injection when the rpm exceed the rpm set here.
- Twin Injector Return RPM: Injection is done only by main injector when the rpm is less than the rpm set here.
- Twin Injector Start Min Injection Time: If 2500(µsec) is entered here, injection takes place from the address of 5000(µsec) or higher in Standard Injection map. Injection is distributed into 50% from main injector and 50% from sub injector; therefore, the total becomes 5000µsec.
- Twin Injector Return Min Injection Time: If 2000(µsec) is entered here, the control mode is returned to a main injector under the address of 4000 (µsec) or less in Standard Injection Time map. During actual driving, as the throttle is off, Deceleration Fuel Cut mode is activated, and the fuel injection time becomes 0µsec; therefore, the sub injector stops its operation.
- Twin Injector Trim: When the imbalance of air-fuel ratios occurs after the injector type is changed to twin injector, the fuel amount is increased or decreased by Twin Injector Trim.
- Twin Injector Change Trim: When the sub injector begins operation, Trim Value suppresses the imbalance of an air-fuel ratio that may occur during the injector type is being changed to twin from single. Decrement Coefficient is to set the trim time. The trim time can be made longer when Decrement Coefficient is smaller, and vice versa.