R8 / LP560 Kit

Thank you for choosing the Syvecs R8 / LP560 Kit

The kit comes with the following:

1 x Syvecs S12 Ecu
1 x Map Sensor
1 x 2 Pin DTM
1 x 12 Pin DTM
1 x DI12
1 x CAN Bridge
1 x Wiring Loom
Spare Pins

Installation

1.) Remove the Negative Terminal from the battery on the Vehicle

2.) Remove the OEM Engine control modules found under the front window compartment of the engine bay, Looks like below.

3.) If wanting to control additional injectors these can be wired into the 12way DTM break out connector found coming out of the Syvecs Ecu – Pinouts found below

1.	**Fuel Output 7**
2.	**Fuel Output 3**
3.	**Fuel Output 8**
4.	**Fuel Output 4**
5.	**Fuel Output 6**
6.	**Fuel Output 2**
7.	**Fuel Output 12**
8.	**Fuel Output 16**
9.	**Fuel Output 11**
10.	**Fuel Output 15**
11.	**VBatt – 12v**
12.	**VBatt – 12v**

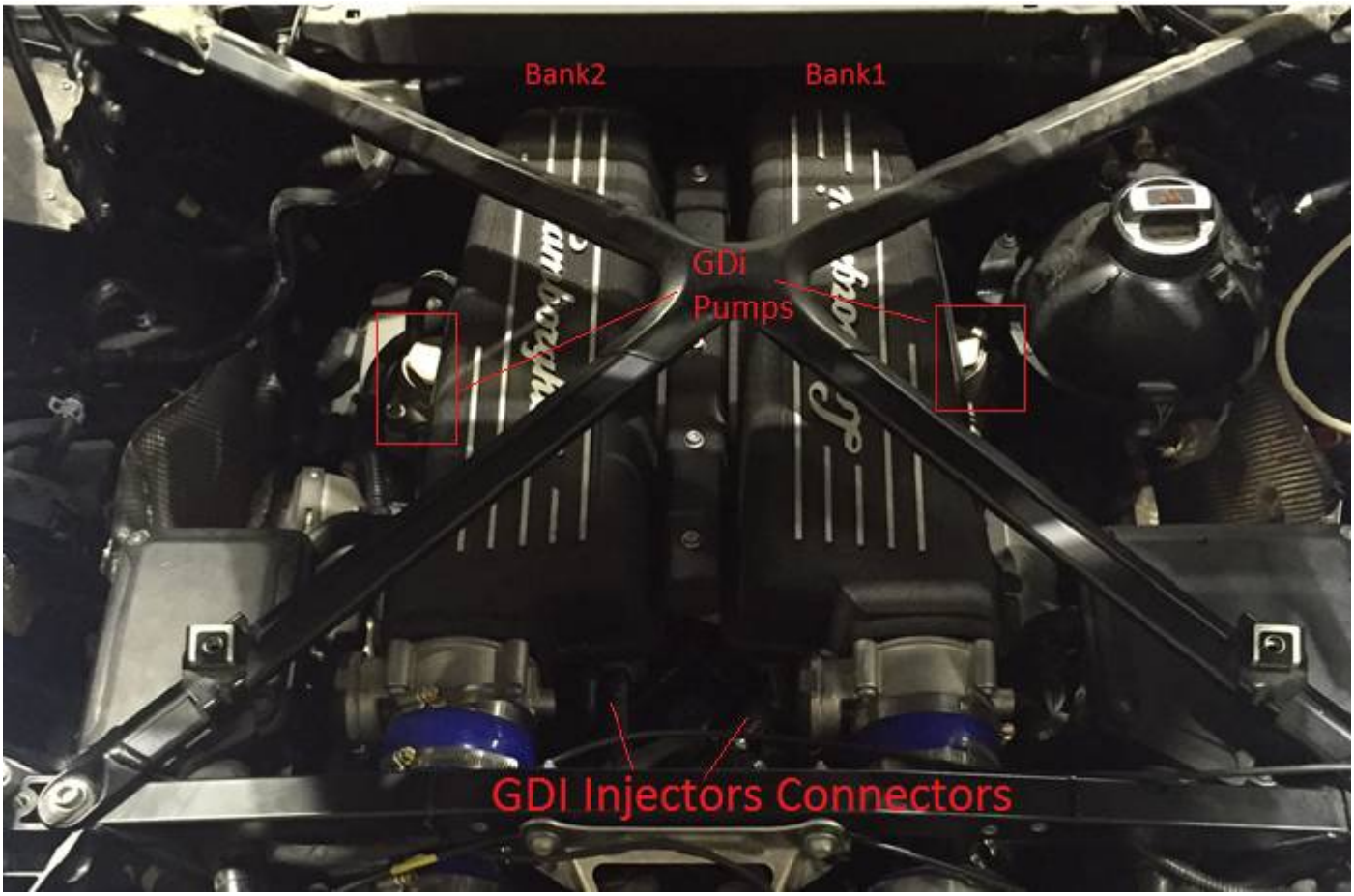
4.) When running forced induction applications additional connectors are found in the loom for Map Sensor, Boost solenoid and air temp sensor. These are labelled in the loom.

Assign in Scal – I/O Configuration – Pin Assignments as below

Map Sensor – AN04
Air Charge Temp – AN22
Boost Solenoid – H-Bridge6

5.) Plug in the Syvecs Ecu connectors where the OEM Ecus used to sit and mount the S12 Ecu in front on the chassis rail of bank1 (Right hand side from Back) After secure the loom on the bulkhead behind the panel shown below.

6.) Plug in the 2 Injector Looms as shown below - MUST PLUG INTO BLACK CONNECTORS - NOT BROWN



7.) Replace the battery terminal and engine covers and proceed to the Syvecs Manual

Gallardo Specific Software Options

Injector Size is set in Fuel Consumption – Injector Consumption Scaling

Injector Size / 60 = ml/s value

OEM DI Injectors are set in the Base map @ 15ml/s for R8 and 17ml/s for LP560

R8/LP560 Kit FAQ and Help

Q) Does the kit come with 10 External injector loom?

A) The Kit comes with a 12way DTM Connector that has the 10 External Injectors and 12v present for allowing wiring for the additional injectors

Q) Can I install different in tank pump?

A) Yes, the Syvecs communicates with the OEM Fuel Pump Ecu to allow PWM Control of the Pump so it can be adjusted to suit your flow demands.

Q) What of the original features will now not work?

A) None, even cruise control works but it doesn't allow you to adjust speed on the stalk, only clamp a speed

Q) Can we use the OBD port still to Log, Read Codes and Clear them on other ecus on the car like ABS?

A) Yes via the Use on VagCom

Q) How is the Fuel Mapping done in Scal

A) On the Secondary injection map – The base map is 4D tuned as MAP1 is before the TPS as default on engine. Uses Secondary Multipler Under Run-Mode Fueling and Simple Manifold Pressure under Run-Mode Fueling – Corrections

Q) How do I setup Additional Port Injectors

A) You first need to assign them in the I/O Config Pin assignment and Program ecu.

After you need to set the Secondary multipler difference between the DI and Port under Run mode fueling – Correction – Secondary Multipler

OEM DI Injectors flow around 650cc.. So do 650 / (Port Injectors cc) to give a good starting point on Secondary multiplier

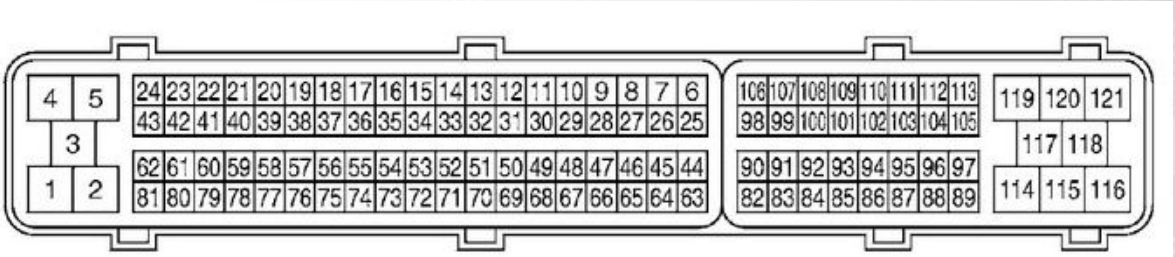
Ensure that the Secondary Injection Opening Time values are correct from your manufacture.

After Start the engine up and monitor the Lambda1 Value and FuelMltCll1 Value. Now go to Injector Split1 and increase the values up to 50% in the area and around that the tracer is showing the engine is current at.

As the Ports start to blend in and you have the Split at 50% you need to be monitoring the Lambda1 and FuelmltCll1. If the values are different compared to before when split was at 0% then adjust the Secondary multiplier live until they are the same with the split present.. Once that is good, set the Split back to 0%,

When the OEM DI Injectors now reach their limit the Syvecs ecu will automatically bring the ports in to maintain the desired fuel requirements, If you wish to bring the port injectors in sooner then set the split table as required.

R8 / LP560 Kit Pinouts



S12 ECU Pinout	S12 Pin Function	SCAL name	R8 / LP560 Decription
1	PWRGND	Ecu Ground	Ground
2	IGN1	Ignition (20A Open Collector)	IGN1
3	IGN2	Ignition (20A Open Collector)	IGN2
4	IGN3	Ignition (20A Open Collector)	IGN3
5	IGN4	Ignition (20A Open Collector)	IGN4
6	IN25		FUEL PRESSURE DI 2
7	KNOCK4	Knock Sensor 2	Knock 4
8	KNOCKGND		KNOCK GROUND
9	THERMO2 +		
10	IN21	Thermistor Input	AIR TEMP
11	IN18	5V Analogue Input	INTAKE MANIFOLD FLAP POT
12	IN14	Configurable Analogue Input	FUEL PRESSURE LOW PRESSURE
13	IN11	Configurable Analogue Input	TPS1A
14	IN7	Configurable Analogue Input	TPS1B
15	IN4	Configurable Analogue Input	External - MAP Sensor
16	IN1	Configurable Analogue Input	CRUISE CONTROL
17	LAMI 1		Red LSU
18	CAN LO 2		
19	RS232 TX		
20	LAN RX-		Orange/White
21	FUEL 7	Fuel Injector (10A Open Collector)	12 Way DTM for Extra Injectors
22	FUEL 3	Fuel Injector (10A Open Collector)	12 Way DTM for Extra Injectors
23	VBAT		Main 12v
24	PWRGND		Ground
25	IN26	5V Analogue Input	PPS2

26	5V OUT	5V OUT	5V Out
27	KNK1	KNOCK1	KNOCK1
28	THERO 1 -	THERO 1 -	
29	IN22	Thermistor Input	External – Air Charge Temp
30	IN19	5V	PPS1
31	IN15	Configurable Analogue Input	INTAKE MANIFOLD FLAP POT 2
32	IN12	Configurable Analogue Input	TPS2A
33	IN08	Configurable Analogue Input	TPS2B
34	ANGND	SENSOR GROUND	Custom Loom for Map Sensor
35	IN02	Configurable Analogue Input	Brake Servo Pressure
36	LAMV 1		Black LSU
37	CAN HI 3		
38	RS232 RX		
39	LAN RX+		White/Orange
40	OUT8		12 Way DTM for Extra Injectors
41	OUT4		12 Way DTM for Extra Injectors
42	VBAT		Bank1 & Bank2 - T14H Connector - Pin14 & Custom Loom for Boost solenoid 12v
43	PWRGND		Relay and canbridge ground
44	IN27	5V	FUEL PRESSURE DI
45	5V OUT		TPS 5V,
46	KNOCK2		Knock2
47	THERMO1+		
48	IN23	Thermistor Input	ENGINE COOLANT TEMP
49	IN20	5V	Steering Column Crank Signal
50	IN16	Configurable Analogue Input	
51	ANGND		
52	IN09	Configurable Analogue Input	Crank Signal
53	IN05	Configurable Analogue Input	
54	ANGND	T60 -28	OIL TEMP, LOW FUEL PRESSURE, PPS
55	LAMV2		
56	CAN LO 3		
57	COMGND		
58	CAN HI 1		To Can Bridge X1 - Pin3
59	LAN TX-		Green/White
60	OUT5		VVT1 EXHAUST
61	OUT1		VVT1 INLET
62	HBRIDGE5		
63	IN28	5V	BRAKE SIGNAL
64	10VOUT		
65	KNOCK 3		Knock3
66	THEMO 02 -		
67	IN24	Thermistor Input	ENGINE OIL TEMP
68	ANGND		CRANK SIG, TPS GROUNDS
69	IN17	5V	Park/Neutral Input from TCM
70	IN13		Cam In1
71	IN10	Configurable Analogue Input	Cam ex1
72	IN6	Configurable Analogue Input	Cam In2
73	IN3	Configurable Analogue Input	Cam ex2
74	LAMI 2		

75	LamGND		Yellow LSU
76	CAN HI 02		
77	CAN LO 1		To Can Bridge X1 - Pin2
78	LAN TX+		White/Green
79	OUT6		12 Way DTM for Extra Injectors
80	OUT2		12 Way DTM for Extra Injectors
81	H BRIDGE 6		Custom Loom for Boost Solenoid
82	H BRIDGE 1		DBW 1 +
83	PWM4		FUEL PUMPS
84	PWM8		Brake Servo Relay
85	FUEL12		12 Way DTM for Extra Injectors
86	FUEL16		12 Way DTM for Extra Injectors
87	FUEL20		VVT2 EXHAUST
88	FUEL24		VVT2 INLET
89	VBAT		Main 12v
90	H BRIDGE 2		DBW1 -
91	PWM3		EXHAUST FLAPS
92	PWM7		AUTOGEARBOX/PWRSTEERING SIGNAL
93	FUEL11		12 Way DTM for Extra Injectors
94	FUEL15		12 Way DTM for Extra Injectors
95	FUEL19		INJECTOR 1 SIG
96	FUEL23		INJECTOR 2 SIG
97	PWRGND		
98	H BRIDGE 3		DBW 2 +
99	PWM2		Fan1 & 2 Signal
100	PWM6		INTAKE MANIFOLD FLAP
101	FUEL10		INJECTOR 3 SIG
102	FUEL14		INJECTOR 4 SIG
103	FUEL18		INJECTOR 5 SIG
104	FUEL22		INJECTOR 6 SIG
105	PWRGND		
106	HBRIDGE4		DBW2 -
107	PWM1		STARTER MOTOR RELAY
108	PWM5		LAMBDA HEATERS
109	FUEL9		INJECTOR 7 SIG
110	FUEL13		INJECTOR 8 SIG
111	FUEL17		INJECTOR 9 SIG
112	FUEL21		INJECTOR 10 SIG
113	PWRGND		
114	IGN5		IGN5
115	IGN6		IGN6
116	IGN7		IGN7
117	IGN8		IGN8
118	IGN9		IGN9
119	IGN10		IGN10
120	IGN11		DI Spill Valve1
121	IGN12		Di Spill Valve2