Syvecs LTD

V1.2

VAG MQB Kit

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com

Contents:

The kit comes with the following:

1 x Syvecs S7Plus

1 x GDI12 Driver

1 x MQB Wiring Adaptor

Installation

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

2.) Remove the OEM Engine control modules found in the engine bay next to the battery

3.) Remove the OEM Ecu Holder which is held in place with 2xM6 nuts

4.) Replace with the Syvecs kit

MQB Specific Software Options

Due to the number of Cars that the MQB Engine is fitted to, an ECU Coding setup needs adjusting in Scal to suit the model of your VAG Group Car.

This is found at the bottom under I/O Configuration
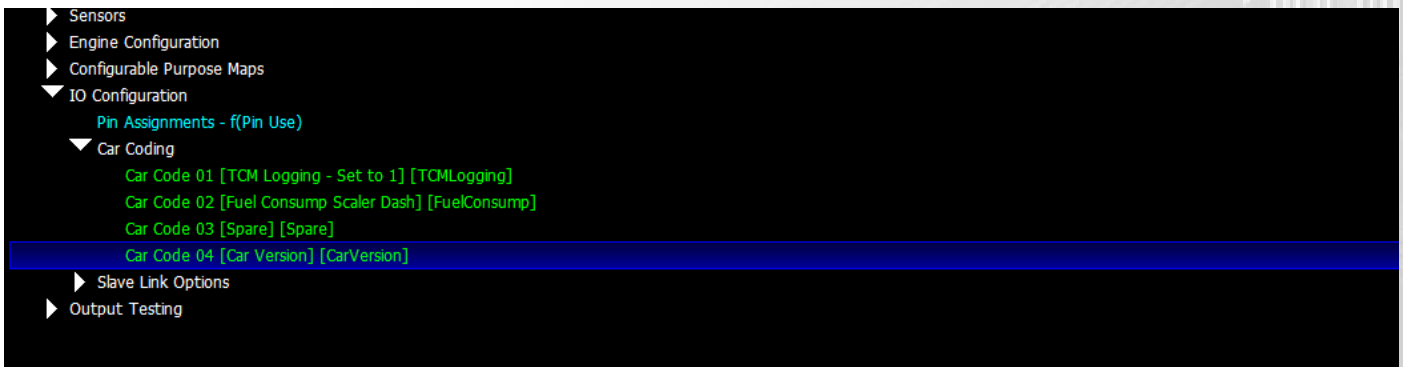
Car Coding4 Values

Golf R7 DSG – 0
Golf GTI DSG - 1
Seat Leon Cupra DSG – 2
Golf R7 Manual – 3
Golf GTI Manual – 4
Seat Leon Cupra Manual - 5
Audi S3 DSG - 6
Audi TT - 7
Golf R7 DSG Other Regions - 8

DSG TCM Logging

The Syvecs kit allows logging of the Clutch pressures from the DSG Gearbox. To enable this Set Car Code1 = 1

IMPORTANT – WHEN DOING GEAR RELEARNS OR COMMUNICATIONS WITH THE DSG ECU VIA VAGCOM SET THIS CARCODE1 = 0

Injector Size is set in Fuel Consumption – Injector Consumption Scaling for Torque Control

Injector Size / 60 = ml/s value

OEM DI Injectors are set in the Base map @ 16ml/s
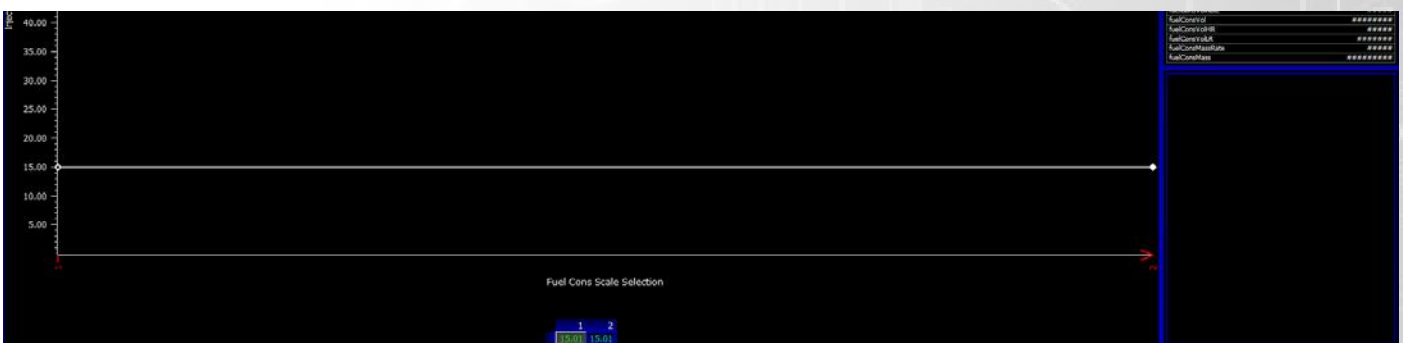
MQB Kit FAQ and Help

Q) Do you control the OEM Intake Flaps

A) Yes, This is set in Output Functions – Fan7 (Intake Flap), Its controlled Based on RPM vs Manifold Pressure

IntakeFlapP_U01 is Position sensor 100% is Closed, 0% is Open

Q) Do you control the Exhaust Cam Lift Solenoids

A) Yes, This is adjustable in Output Function – Variable Cam Control

Q) How is the Piston Cooling Oil Valves controlled?

A) This is found in Output Functions – Fan4 (Oil Cooling), Its controlled Based on Load

Q) How is the Electronic Blow of Valve controlled

A) This is found in Output Functions – Fan5 (Turbo Recirc) , Its controlled via Throttle Angle, Manifold Presure and RPM

Q) Does the Different Drive Modes from the Car comes into Scal

A) DriveMode Comes in on Slave AN22 - Comfort = 10%, Normal = 20%, Race = 30%, TC Off = 50%

Q) How is the Electric Wastegate controlled on the OEM Golf 7 Turbo

A) Boost control is on Supercharger Bypass Strategy, (SBV = 0 is WG Shut, SBV = 100 is WG Open) . If changing to External WG need to change to Custom Can - Transmit content Frame 2 Slot 2 to WGTarget1

Q) How is the Electric Thermostat Controlled

A) This is Controlable in Output Function – Fan8 (Coolant Flow Control) - Coolant Thermostat Position (CTP) at 0% means Thermostat is Open Fully, 100% means Closed Fully

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 new pump. This is found in Output Function – Fuel Pump - Fuel Pump PWM 1 Control

Q) What of the original features will no longer work?

A) All original features will function properly

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 do I adjust the Port Injector Sizing

First set the Secondary Injector Opening times in RunMode Fueling – Corrections

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.

Email Support@syvecs.co.uk for a base map to suit your setup.

A

		DESCRIPTION	CONNECTOR A	
		PART NUMBER	4-1437290-0	
		NOTES:	34 Way - Key1	

Syvecs Description	Syvecs Pinout	Function	
PWR CTR OUT	A1	MAIN RELAY OUTPUT	
H-Bridge1 / SlaveOut1	A2	H-Bridge1	DBW +
H-Bridge2 / SlaveOut2	A3	H-Bridge2	DBW -
H-Bridge3 / SlaveOut3	A4	H-Bridge3	Boost Press Positioner + (V465)
H-Bridge4 / SlaveOut4	A5	H-Bridge4	Boost Press Positioner - (V465)
H-Bridge5 / SlaveOut5	A6	H-Bridge5	Turbo Recirc
H-Bridge6 / SlaveOut6	A7	H-Bridge6	Starter Relay
H-Bridge7 / SlaveOut7	A8	H-Bridge7	Coolant Flow Control + (N493)
H-Bridge8 / SlaveOut8	A9	H-Bridge8	Coolant Flow Control - (N493)
FUEL1	A10	INJECTOR or PWM OUTPUT	Primary Injector 1
FUEL2	A11	INJECTOR or PWM OUTPUT	Primary Injector 2
FUEL3	A12	INJECTOR or PWM OUTPUT	Primary Injector 3
FUEL4	A13	INJECTOR or PWM OUTPUT	Primary Injector 4
FUEL5	A14	INJECTOR or PWM OUTPUT	Port Injector 1 (N532)
FUEL6	A15	INJECTOR or PWM OUTPUT	Port Injector 2 (N533)
FUEL7	A16	INJECTOR or PWM OUTPUT	Port Injector 3 (N534)
FUEL8	A17	INJECTOR or PWM OUTPUT	Port Injector 4 (N535)
PWM1 / *FUEL9	A18	PWM OUTPUT	Cooling Oil Valve
PWM2 / *FUEL10	A19	PWM OUTPUT	Intake Manifold Flap (N316)
PWM3 / *FUEL11	A20	PWM OUTPUT	Fuel Pump PWM
PWM4 / *FUEL12	A21	PWM OUTPUT	Cooling Fan PWM
PWM5 / *FUEL13	A22	PWM OUTPUT	Exhaust Cam A
PWM6 / * FUEL14	A23	PWM OUTPUT	Exhaust Cam B - Power Cam
PWM7 / * FUEL15	A24	PWM OUTPUT	VVT1 Int (N205)
PWM8 / *FUEL16	A25	PWM OUTPUT	VVT1 Ex (N316)
IGN1	A26	CYL 1 IGNITION OUTPUT	IGN1 (N70)
IGN2	A27	CYL 2 IGNITION OUTPUT	IGN2 (N127)
IGN3	A28	CYL 3 IGNITION OUTPUT	IGN3 (N291)
IGN4	A29	CYL 4 IGNITION OUTPUT	IGN4 (N292)
IGN5	A30	CYL 5 IGNITION OUTPUT	Di Pump Signal to Di12
IGN6	A31	CYL 6 IGNITION OUTPUT	Tacho Sync
PWRGND	A32	POWER GROUND	PwrGnd
PWRGND	A33	POWER GROUND	PwrGNd
PWRGND	A34	POWER GROUND	PwrGNd

B

		DESCRIPTION	CONNECTOR B	
		PART NUMBER	3-1437290-7	
		NOTES:	26 Way - Key1	

PWRGND	B1	POWER GROUND	PWRGROUND
CAN2L	B2		
CAN2H	B3		
KNOCK	B4	KNOCK	Knock +

KNOCK 2	B5	KNOCK 2	
PVBAT	B6	CONSTANT 12V	
IVBAT	B7	12v	12v (87a) (SB3) (J271)
LAM1A	B8	Lamv / LamD1+/ LamLun1	Pin6 on LSU4.9 Connector 5 wire sensor
LAM1B	B9	Lami / LamD1- /LamIP1	Pin1 on LSU4.9 Connector
LAM1C	B10	LamLIA1	Pin5 on LSU4.9 Connector
LAM1D	B11	LamGND / LamLVM1	Pin2 on LSU4.9 Connector
LAM1HEATER	B12	LAMBDA HEATER	Pin3 on LSU4.9 Connector
IVBAT	B13	12V	
LAM2A	B14	Lamv / LamD1+/ LamLun1	
LAM2B	B15	Lami / LamD1- /LamIP1	
LAM2C	B16	LamLIA1	
LAM2D	B17	LamGND / LamLVM1	
LAM2HEATER	B18	Slave Out 10	Evap Solenoid
IVBAT	B19	12V	
KLINE	B20	Kline	
RS232RX	B21	RS232RX	
RS232TX	B22	RS232TX	
LANRX-	B23	Cat5 Pin2	
LANRX+	B24	Cat5 Pin1	
LANTX-	B25	Cat5 Pin6	
LANTX+	B26	Cat5 Pin3	

C			
	DESCRIPTION	CONNECTOR C	
	PART NUMBER	4-1437290-1	
	NOTES:	34 Way - Key2	

KNOCKGND	C1	KNOCKGND	Knock -
ANGND	C2	SENSOR GND	
ANGND	C3	SENSOR GND	
ANGND	C4	SENSOR GND	
5V OUT	C5	5V OUT	
5V OUT	C6	5V OUT	
5V OUT	C7	5V OUT	
CAN L	C8	Can Low	Powertrain Can
CAN H	C9	Can High	Powertrain Can
AN01	C10	BI-POLAR INPUTS	Di Pressure
AN02	C11	BI-POLAR INPUTS	Map Sensor
AN03	C12	BI-POLAR INPUTS	Charge Pressure (G31) 4 wire?
AN04	C13	BI-POLAR INPUTS	Fuel Pressure Low Side
AN05	C14	UNI-POLAR INPUTS	VVT1In Pos
AN06	C15	UNI-POLAR INPUTS	VVT1Ex Pos
AN07	C16	UNI-POLAR INPUTS	Crank Sensor
AN08	C17	UNI-POLAR INPUTS	Brake Lt Sw
AN09	C18	VOLT-INPUTS	TPS1A
AN10	C19	VOLT-INPUTS	TPS1B
AN11	C20	VOLT-INPUTS	PPSA
AN12	C21	VOLT-INPUTS	PPSB
AN13	C22	RESISTIVE INPUTS	Coolant Temp (G62)
AN14	C23	RESISTIVE INPUTS	Intake Air Temp

AN15	C24	RESISTIVE INPUTS	
AN16	C25	RESISTIVE INPUTS	Oil Pressure Sw 2bar
EGT1-	C26	EGT1 -	
EGT1+	C27	EGT1 +	
PWR CTR IN	C28	MAIN RELAY INPUT SW	Key On sig (15)
AN S1 / Slave An01	C29	UNI-POLAR INPUTS	Oil Level / Temp
AN S2 / Slave An02	C30	UNI-POLAR INPUTS	Clutch Switch
AN S3 / Slave An03	C31	UNI-POLAR INPUTS	Cooling Termostat Position (N493)
AN S4 / Slave An04	C32	UNI-POLAR INPUTS	Wastegate Pos Sen (G581)
AN S5 / Slave An05	C33	UNI-POLAR INPUTS	Intake Pos Flap
AN S6 / Slave An06	C34	UNI-POLAR INPUTS	Starter Signal

Pin	Name	LENGTH Metre	Notes
1	LS1	0.5	Injector 1 -
2	LS2	0.5	
3	LS3	0.5	
4	LS4	0.5	
5	LS5	0.5	
6	LS6	0.5	Injector 4 -
7	LS12	0.5	
8	LS11	0.5	Injector 2 -
9	LS10	0.5	DI Pump Low Signal
10	LS9	0.5	
11	LS8	0.5	
12	LS7	0.5	Injector 3 -
13	Input 1	0.5	Injector 1 Signal
14	Input 2	0.5	
15	Input 3	0.5	
16	Input 4	0.5	
17	Input 5	0.5	
18	KLINE	0.5	
19	Input 11	0.5	Injector 2 Signal
20	Input 10	0.5	DI Pump Signal
21	Input 9	0.5	
22	Input 8	0.5	
23	Input 7	0.5	Injector 3 Signal
24	VBAT1	0.5	12V
25	HS1,2	0.5	Injector 1 +
26	PWRGND	0.5	GROUND
27	HS3,4	0.5	
28	HS5,6	0.5	Injector 4 +
29	Input 6	0.5	Injector 4 Signal
30	Input 12	0.5	
31	HS11,12	0.5	Injector 2 +
32	HS9,10	0.5	DI Pump High Side
33	PWRGND	0.5	GROUND
34	HS7,8	0.5	Injector 3+
35	VBAT2	0.5	12V