Syvecs LTD

V1.2

Subura Impreza 2006-2014

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:

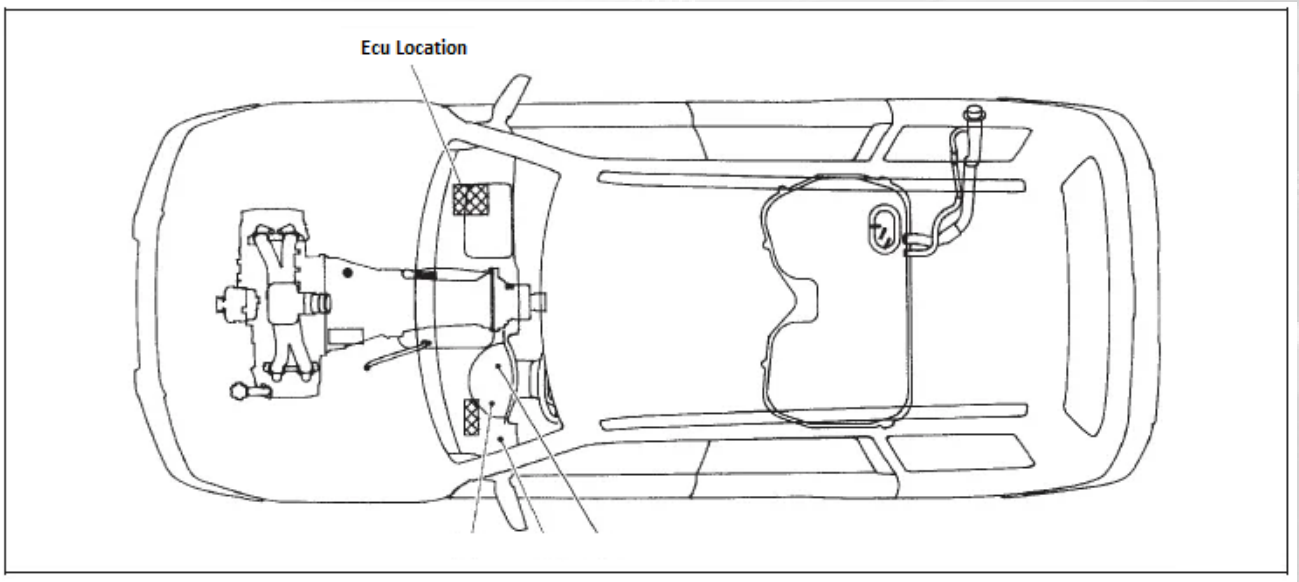
1 x Syvecs S7Plus

1 x 06-14 Impreza Loom Adaptor

Installation

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

2.) Unplug the OEM Engine control module found underneath the Glove box. There will be 4 connectors

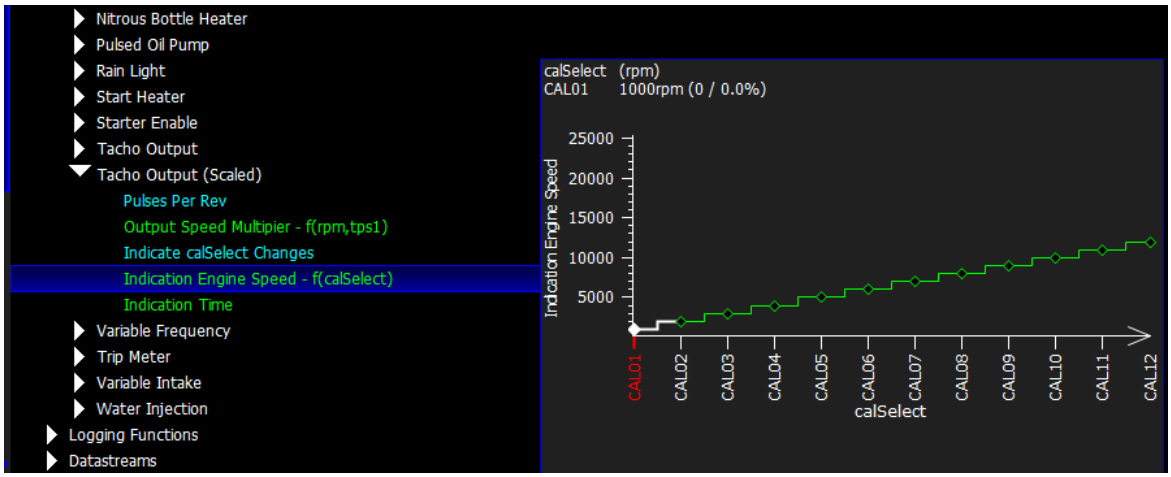


3.) Plug the 4 Connectors into the Syvecs Plug in Harness

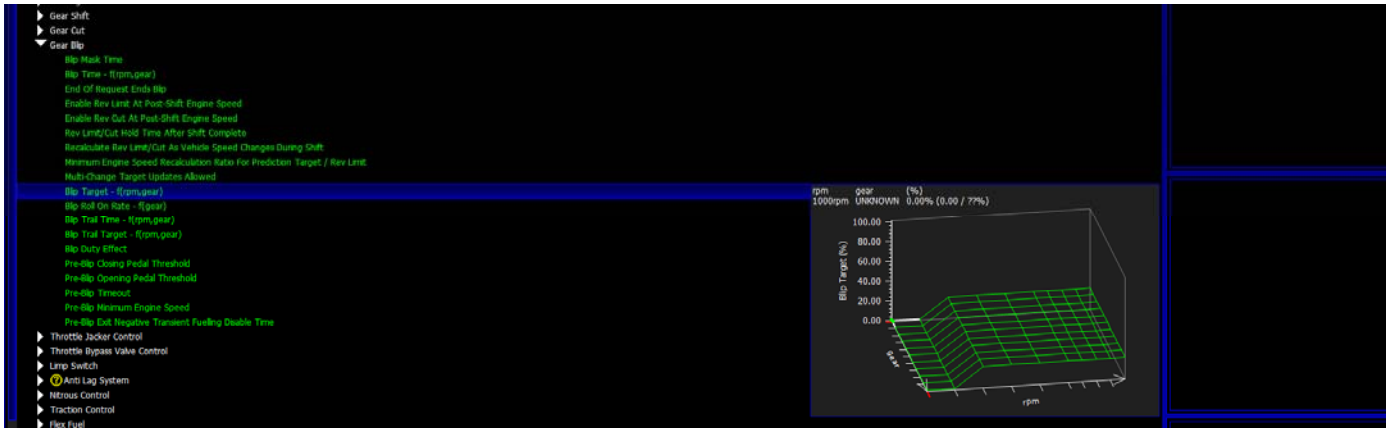
06-14 Software Options

Cal Position Shown on Dash - The Calibration Switch position can be displayed on the OEM RPM/Tacho counter

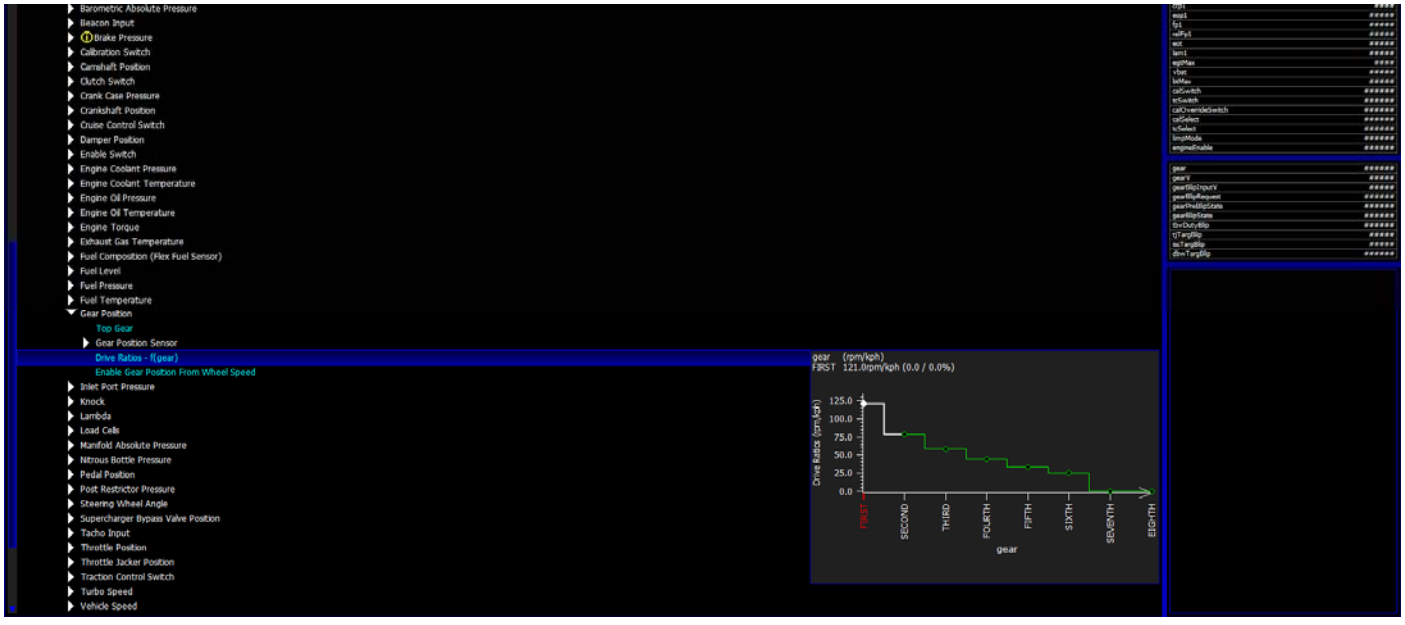
with firmware versions 1.752+. In Scal calibrators can set the RPM Value for each CalSelect



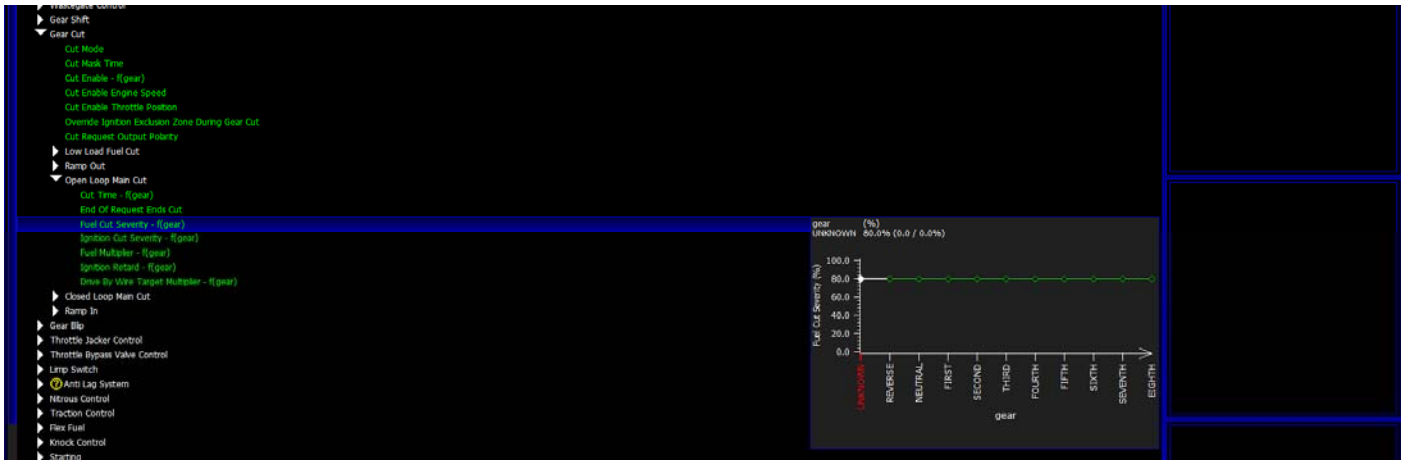
Rev Matching (Blip on DownShift) is active when Clutch is Pressed, Brake is Pressed and RPM is Above 2000rpm. This will send a GearBlip Request on Slave1 AN23 which is then fully adjustable via Gearblip settings to suit engine type



The Ecu calculates the correct rev matching Rpm based on the Drive Ratios. If you are using a different Ratio to Factory you can adjust these Drive Ratios here



Flat Shifting – Means users can shift gear without removing the accelerator pedal. It is adjustable via Gear Cut Settings. When the Clutch is pressed, Throttle is greater than 60% and RPM is more than 3500rpm a Gear Cut request signal is sent causing the Open loop gear cut cals to become active. When the Clutch pedal is not pressed the Cut will end and Ramp in Stage of Gearcut will become active to allow smoothing of torque cuts.



06-14 FAQ and Help

Q) Do you control the OEM VVT

A) Yes, this is adjustable via Variable Valve timing calibrations, Can Change Intake and Exhaust Cam Targets

Q) Do you Supply a Base map for the Kit

A) Yes as with all out kits we supply a very good base calibration to get everything working for you

Q) Does the Traction Switch and VSC Sport Switch come into the ECU Via Canbus

Q) How do we change calibrations

A) This is done via the OEM Steering wheel Cruise buttons, Up is Cal Up, Down is Cal Down

Q) Can I install different in tank pump?

A) Yes, the Syvec's 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 now not work?

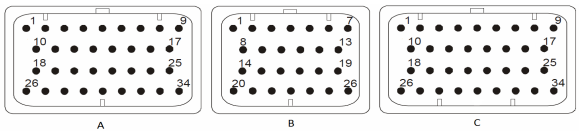
A) None, even cruise control works

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 OEM Tools or Ecutek

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

06-14 Pinouts

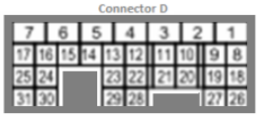


Connector C

Connector A

Connector B

Connector D



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

Syvecs Description	*Syvecs Pinout*	*Impreza*	*Impreza Notes*	*Notes*
PWR CTR OUT	A1	B23	Main Relay	
H-Bridge1	A2	D4*	DBW+	H-BRIDGE OUTPUTS, CAN BE DRIVEN HIGH OR LOW. USED GENERALLY FOR MOTOR CONTROL, PWM OUTPUT, VANOS .....
H-Bridge2	A3	D5*	DBW-	
H-Bridge3	A4	B20	Starter Relay	
H-Bridge4	A5	B22	Tacho	
H-Bridge5	A6	D12	Tumble Generator Open LH	
H-Bridge6	A7	D13	Tumble Generator Close LH	
H-Bridge7	A8	D22	Tumble Generator Open RH	
H-Bridge8	A9	D23	Tumble Generator Close RH	
FUEL1	A10	D8	Injector 1	FUEL INJECTOR OUTPUTS CAPABLE OF HIGH IMPENDANCE INJECTORS ONLY OR USED AS OUTPUTS FOR DEVICES, SUPPORTS PWM AND CAN HANDLE 10AMP MAX
FUEL2	A11	D9	Injector2	
FUEL3	A12	D10	Injector 3	
FUEL4	A13	D11	Injector 4	
FUEL5	A14			
FUEL6	A15			
FUEL7	A16			
FUEL8	A17			
PWM1 *FUEL9-SB20 (12v 470R Pullup)	A18	B18	Rad Fan	PWM OUTPUTS CAPABLE OF UP TO 10AMPS MAX, HAVE OPTION VIA HARDWARE JUMPER TO APPLY 12V PULLUP USED FOR SOME TACHOS
PWM2 *FUEL10-SB23 (12v 470R Pullup)	A19	B29	Rad Fan2	
PWM3 *FUEL11-SB24 (5v 470R Pullup)	A20	B10 - (5v Pullup)	Alternator	PWM OUTPUTS CAPABLE OF UP TO 10AMPS MAX, HAVE OPTION VIA HARDWARE JUMPER TO APPLY 5V PULLUP USED FOR OEM FUEL PUMP CONTROLLERS
PWM4 *FUEL12-SB26 (5v 470R Pullup)	A21	B9	A/C Relay	
PWM5-SB27 (Flyback Diode)	A22	D14 – (Diode)	VVT OCV - LH Inlet	PWM OUTPUTS CAPABLE OF UP TO 10AMPS MAX, HAVE OPTION VIA HARDWARE JUMPER TO FLYBACK DIODE, WISE TO USE WITH VARIABLE VALVE SOLENOIDS
PWM6-SB29 (Flyback Diode)	A23	D16 – (Diode)	VVT OCV - RH Inlet	
PWM7-SB32(Flyback Diode)	A24	D30 – (Diode)	VVT OCV – LH Exhaust	
PWM8-SB35(FlyBack Diode)	A25	D24 – (Diode)	VVT OCV – RH Exhaust	
IGN1	A26	D18	Ignition Coil 1	
IGN2	A27	D19	Ignition Coil 2	
IGN3	A28	D20	Ignition Coil 3	
IGN4	A29	D21	Ignition Coil 4	
IGN5	A30	B12	Fuel Pump Control	
IGN6	A31	D27	Wastegate	IGBT!!!!!
PWRGND	A32	A35, B6	AirFlow Shield, PPS Shield	LINKED POWER GROUND
PWRGND	A33	D1, D2, D3	PwrGnd	LINKED POWER GROUND
PWRGND	A34	D6, D7, D26, C24, C25	PwrGnd	LINKED POWER GROUND

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

PWRGND	B1	A1, C5	PwrGnd	LINKED POWER GROUND
EGT2 +	B2			
EGT2 -	B3			
KNOCK	B4	C15	Knock Signal	
KNOCK 2	B5			
PVBAT	B6	A5		CONSTANT 12V POWER SUPPLY
IVBAT	B7	A2		LINKED 12V FEED - NORMALLY COME FROM MAIN RELAY
LAM1A	B8	Grey NTK	Denso Lambda	Nernst Cell
LAM1B	B9	White NTK	Denso Lambda	Ion Pump
LAM1C	B10	A20	Brake Switch 1	Cal Trim Resistor
LAM1D	B11	Black NTK		Virtual Ground
LAM1HEATER	B12	Blue NTK	Denso Lambda	
IVBAT	B13	Yellow NTK		
LAM2A (	B14	C16	Tumble Generator Signal LH	SOLDER BRIDGE
LAM2B	B15			
LAM2C	B16	C26*		SOLDER BRIDGE
LAM2D	B17			
LAM2HEATER	B18	B4		
IVBAT	B19	D15, D17, D25, D31	VVT OCV + LH Inlet, VVT OCV + RH Inlet	LINKED 12V FEED - NORMALLY COME FROM MAIN RELAY
KLINE	B20	B16		KLINE INTERFACE FOR OBDII
RS232RX	B21			RS232 RECEIVE
RS232TX	B22			RS232 TRANSMIT
LANRX-	B23			Orange/White
LANRX+	B24			White/Orange
LANTX-	B25			Green/White
LANTX+	B26			White/Green

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

KNOCK GROUND	C1		Knock Ground	KNOCK GROUNDS
ANGND	C2	A29, A30, A34	PPS Ground, Maf Ground	SENSOR GROUND CIRCUIT
ANGND	C3	C14, C22, C29	Crank Ground	SENSOR GROUND CIRCUIT
ANGND	C4		Accelerator pedal Shield/ECU GND	SENSOR GROUND CIRCUIT
5V OUT	C5	A21, A22		5V OUT CIRCUIT
5V OUT	C6	C19	TPS 5v	5V OUT CIRCUIT
5V OUT	C7			5V OUT CIRCUIT
CAN L	C8	B35		
CAN H	C9	B27		
AN01	C10	C13	Crank Signal	0-5V or SPEED, FREQUENCY INPUT - Pull Up Available in Software
AN02	C11	C6	Map Signal	0-5V or SPEED, FREQUENCY INPUT - Pull Up Available in Software
AN03	C12	A4	Rear O2	0-5V or SPEED, FREQUENCY INPUT - Pull Up Available in Software
AN04	C13	A26*	Air Flow Signal	0-5V or SPEED, FREQUENCY INPUT - Pull Up Available in Software
AN05	C14	C21	Intake Cam Signal LH	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN06	C15	C11	Intake Cam Signal RH	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN07	C16	C31	Exhaust Cam Signal LH	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN08	C17	C12	Exhaust Cam Signal RH	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN09	C18	A23	Pedal Sensor 1	0-5V INPUT
AN10	C19	A31	Pedal Sensor 2	0-5V INPUT
AN11	C20	C18	TPS1	0-5V INPUT
AN12	C21	C28	TPS2	0-5V INPUT
AN13	C22	C34	Coolant Temp	RESISTIVE 0-5V INPUTS WITH 5V PULLUP BUILT IN
AN14	C23	A18	Air Charge Temp	RESISTIVE 0-5V INPUTS WITH 5V PULLUP BUILT IN
AN15	C24	B31	Neutral Switch	RESISTIVE 0-5V INPUTS WITH 5V PULLUP BUILT IN
AN16	C25	C33	Power Steering Sw	RESISTIVE 0-5V INPUTS WITH 5V PULLUP BUILT IN
EGT1-	C26			
EGT1+	C27			
PWR CTR IN	C28	A19	Ignition Switch	MAIN RELAY INPUT SWITCH SUPPLY
AN S1 / / Slave An01	C29	B25	Clutch Switch	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN S2 / Slave An02	C30	A12	Cruise Main Switch	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN S3 / Slave An03	C31	A28	Brake Switch 2	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN S4 / Slave An04	C32	B24	A/C Swith	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN S5 / Slave An05	C33	A24	Cruise Command Switch	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar
AN S6 / Slave An06	C34	B13	A/C Middle Switch	-5V or FREQUENCY INPUT with Fixed Thresholds - Pull Up Available in Softwar