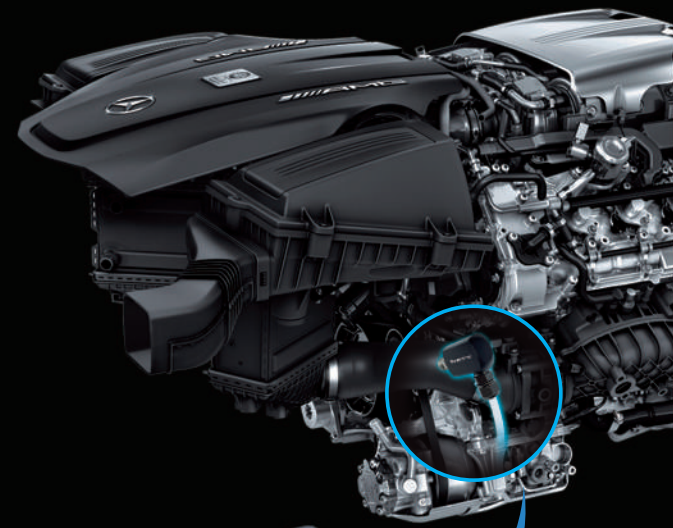




POWER
UNLEASHED!!



WHY DO YOU NEED METHANOL INJECTION?

BOOST UP THE OCTANE RATING

Octane rating measures a fuel's knock resistance; higher ratings mean less engine knocking. Racing fuel has a high octane number of up to 116 RON, but mixing 122 RON methanol with high-grade gasoline can create an equivalent blend. This is a more affordable and practical option.

COOL DOWN AT HIGHEST EFFICIENCY

Reducing the intake temperature is crucial for turbocharged engines, particularly those equipped with larger turbochargers, as the standard intercooler may prove inadequate. Methanol Injection delivers direct, rapid results, cooling the intake air and reducing turbo lag simultaneously.

SMART BOOST METHANOL INJECTION KIT



PRODUCT DIVERSIFICATION TO MEET DIFFERENT CUSTOMER NEEDS



MI GAUGE



SMART BOOST PLUS



SMART BOOST PRO



SMART BOOST MI

Basic Specification	Size (mm)	Ø 66	129 x 133 x 40	145 x 147 x 40	129 x 133 x 40
	Weight (gram)	170	335	425	335
	CPU	8-bit	32-bit	32-bit + 32-bit	32-bit
	Main connector	×	64 pin	64 pin	64 pin
Map Quantity	Analog In / Out	×	3	4	×
	Pump control	×	1	2	2
	Switch control	×	1	2	2
Function	Data storage	×	1 set in EEPROM		
			Extra pre-programmed templates can be purchased and downloaded		×
	Data modification	×	5 sets in cloud server		×
	Methanol injection control	×	On-screen adjustment (with AirForce ONE software)		
Optional Function	Power off with liquid level sensor	×	Map control (with optional pump and/or switch control wire sets)		
	Pipeline air purge button	×			
	Smart OLED Display	×			

If you need to manage both engine output and methanol injection together, you can choose VAITRIX SMART BOOST PLUS or PRO based on I/O requirements. For only regulating methanol injection, VAITRIX SMART BOOST MI or MI GAUGE is a suitable option.



LIQUID LEVEL SENSOR (optional)

The optional sensor will automatically cut off the power upon detecting a low liquid level in the tank.

SOLENOID VALVE

Included in our methanol injection kit, VAITRIX SOLENOID VALVE functions similarly to a fuel injector, as it aids in boosting pressure while also preventing the reverse flow of the methanol mixture.



Using the optional 90° injector holder prevents methanol residues and ensures a smooth engine start.

METHANOL / WATER INJECTION PUMP

The combination of high pressure and flow rate results in an increase in power output.



METHANOL / WATER TANK - 12L TYPE

The 12-liter tank has a top-input/bottom-output design with an optional liquid level sensor for added safety.

The specialized cutoff is intended to conceal the methanol pump to save more space.

SOLID STATE RELAY

The solid state relay included in the POWER WIRE SET can regulate the power to the pump.



METHANOL INJECTOR

The liquid injector, equipped with an integrated metal filter, sprays a fine mist of the methanol mixture to maximize performance improvement.



METHANOL INJECTION GAUGE PERFORMANCE WITH 2D MAPPING CONTROL

Our METHANOL / WATER INJECTION system can seamlessly integrate with VAITRIX MI GAUGE (METHANOL / WATER GAUGE), enabling precise regulation of methanol / water injection timing in relation to boost pressure.

POWER UNLEASHED!!

INITIAL METHANOL INJECTION

FULL METHANOL INJECTION

METHANOL

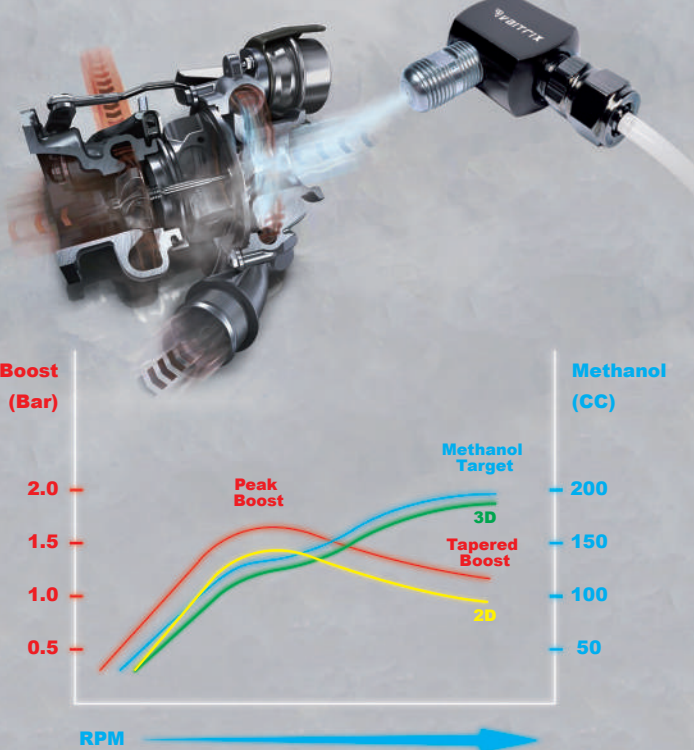
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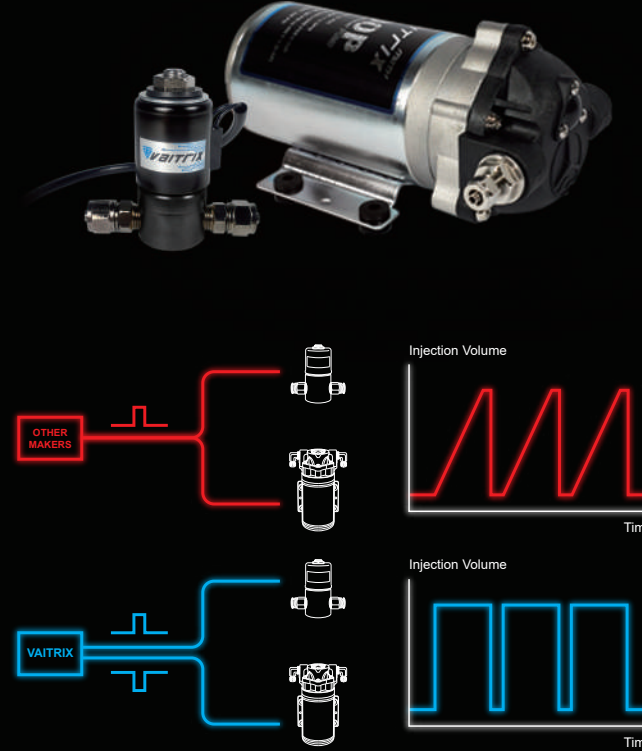
SMART BOOST PIGGYBACK PERFORMANCE WITH 3D MAPPING CONTROL

Most MWI (Methanol / Water Injection) systems available in the market regulate the volume of the injected water / methanol mixture solely based on the boost pressure. While this method is simple, it is not ideal for precise injection volume control. To unlock an engine's full potential, the injected mixture must be in proportion to the intake airflow. At low to medium RPM, boost pressure correlates with the intake air flow, but at high RPM, the engine's boost pressure decreases, which presents a challenge for traditional injection methods to provide sufficient fuel to keep the engine running. To address this issue, VAITRIX METHANOL / WATER INJECTION system employs an advanced method of injection control. Our system uses 3D Mapping Control technology to determine the appropriate amount of methanol required based on the engine's RPM and boost pressure. As a result, the system enhances the engine's performance across the entire RPM range.



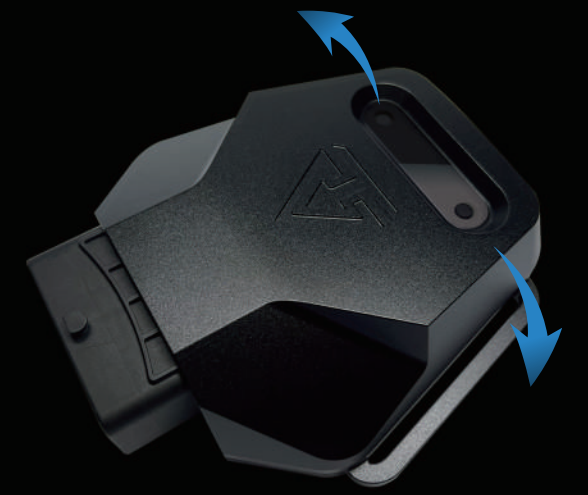
PRECISE METHANOL INJECTION WITH ASYNCHRONOUS PUMP / VALVE CONTROL

Other manufacturers' MWI (Methanol / Water Injection) systems typically send signals to both the methanol pump and injection valve solenoid simultaneously. This causes an issue where it takes time for the pump to build up pressure, resulting in imprecise injection as expected. On the contrary, VAITRIX MWI system uses different analog outputs to control its methanol pump and injection valve solenoids. This allows the system to create a time difference between the activation of the pump and solenoids. Consequently, when the valve opens, the injection pressure can immediately reach the expected value. Additionally, users can customize the length of the time difference using VAITRIX AirForce ONE software utility to fit various tubing lengths of different car models.



ONBOARD ON / OFF SWITCH

Switch between enthusiastic tuning mode and manufacturer default with just one click.



ENSURING TIMELY INJECTION WITH PRE-SPRAY FEATURE

VAITRIX's exclusive pre-spray feature is designed to release any trapped air that may accumulate in the tubing when the methanol / water injection system has not been used for a period of time. This ensures that the car receives a full supply of methanol in a timely manner.

MORE SENSORS FOR MORE SAFETY

To ensure the proper functioning of the methanol injection system, consider adding optional boost pressure and intake air temperature sensors to your package.



INTERFACE DESCRIPTION

- Cloud servers options
- Data traffic record and cursor shapes
- Plug-in connection status and data access
- Transmitting data to the plug-in from the computer
- Automatically displays
- Programmable data system
- Data and features settings
- Map copy

OP-1

Min: 1.50 Max: 4.80

Tuning Strength: 0% Response Time: 0%

The highest and lowest safe range of values can be programmable, such as operating output signal and output response time.

SWITCH CONTROL / METHANOL INJECTION MAPPING

SW-1

Load: 1000

Offset: 1

SW-2

Load: 1000

Offset: 1

METH-1

Load: 1000

Offset: 1

METH-2

Load: 1000

Offset: 1

SWITCH ON

The valve/injector is switched on (cell value "1") or off (cell value "0") based on the engine rev (X-axis) and loading (Y-axis). The real-time condition of the valve/injector is displayed in the status boxes SW-1 and SW-2 located at the bottom of the panel.

SHUT OFF

The amount of methanol injected is determined by the engine rev (X-axis) and loading (Y-axis). The injection power is measured by the duty cycle of the injection pump, with 0% indicating no output and 100% indicating maximum output.

80% means large amount of methanol

20% means small amount of methanol

ALTERNATOR VOLTAGE CORRECTION

Alternator Voltage

Voltage Correction: 100%

Enabling this function allows for automatic compensation of voltage output undulations from the car's alternator. This compensatory action prevents irregular power supply from affecting the output of the methanol pump.

Setting the "Voltage Correction" to 100% results in a fully calibrated volume of pumped methanol that should be consistent with the intended amount.

Setting the "Voltage Correction" to 50%, it compensates for relatively high and low voltage outputs.

Setting the "Voltage Correction" to 0%, it does not calibrate the output.

Boost Pressure

Max Pressure: 1.2 Bar

Low Liquid Level

Auto Shutdown: ON

RPM

Cylinders: 4

BOOST PRESSURE SETTING

The maximum boost pressure can be set to prevent the engine from being overcharged.

LOW LIQUID LEVEL AUTO SHUTDOWN SETTING

Enabling the auto shutdown function results in the system automatically shutting down when the methanol liquid level in the tank falls below the safe limit.

CYLINDER NUMBER SETTING

Choose one of the numbers 1, 2, 3, 4, 5, 6, 8, or 10 to match correct engine RPM.