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The **MICROTECH MF-1** is an advanced electronic control system which has been developed to satisfy the specific needs of turbocharged engines. It incorporates a fully featured auxiliary injector driver, and an output which can be programmed to activate at set boost levels to operate such devices as water/methanol injection, switching nitrous oxide on/off or any other device.

● SPECIFICATIONS

Compatibility:	for turbocharged 4-stroke or rotary engines
Voltage:	6.25 to 26 V
Amps:	100 mA (not including injectors)
MAP sensor:	0 to 22 psi
Injectors:	max. 2 x 2.0 ohm injectors max. 4 x 15 to 17 ohm injectors in parallel per bank
Outputs:	2 x negative trigger programmable channels
Dimensions:	83mm(L) x 131mm(W) x 20mm(D) anodised aluminium case

● INSTALLATION

* To prevent injury or damage, disconnect the negative (-) terminal of the vehicles' battery before commencing installation.

1. Find a suitable mounting position for the MF-1, allowing enough clearance to be able to read the indicators and access the adjustment trimpots .
2. Mark the screw locations and drill the holes with a 1/8" drill bit. Screw the MF-1 into position using short self-tapping screws.
3. Connect the BLACK wire to a good earth point on the vehicle chassis.
4. Connect one of the two RED wires to an ignition (switched) power source.
5. Connect the WHITE wire to the negative (-) side of the coil.
6. The MF-1 will drive one to two 2.0 ohm fuel injectors in parallel (four injectors optional), or up to four 15 to 17 ohm fuel injectors in parallel (eight injectors optional).

7. If an auxiliary injector(s) is to be installed, it should be placed so that it injects a fuel mist into a position of high air flow. This will aid in the atomisation of the fuel, and help to ensure that all cylinders receive an even amount of extra fuel, thus preventing any cylinder from "leaning out".

The best (easiest) position for an auxiliary injector is in the boost pipe between the turbocharger and the throttle body. NOTE that if the system is intercooled, it must be a position AFTER the intercooler.

Mounting of the auxiliary injector is probably best left to a mechanic, and if you plan to perform the installation yourself, seek advice first on the best location.

Fuel supply for the auxiliary injector can now be fed by installing a T-junction into the regulated fuel supply rail.

Connect the YELLOW and the remaining RED wires to the auxiliary fuel injector(s).

8. The PINK and GREEN wires are the switching lines for devices to be driven off the MF-1. This is an **EARTH SWITCH** and should be used to switch a relay.

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Connect the relay as follows:

- pin 85: connect to PINK wire
- pin 86: connect to GREEN wire
- pin 87: connect to a power source (eg. via a fuse to the positive (+) terminal of the battery)
- pin 30: supplies 12v to the device to be switched.

Connect the device as per manufacturers instructions, using pin 30 of the relay as your power source.

9. If the vehicle already has a boost pressure line fitted (eg. to a turbo boost gauge or EFI computer), cut this line at a convenient point, and install a T-piece into the line. Using 5/32" vacuum hose, connect the line to the MAP sensor on the MF-1.

The majority of turbocharged engines will already have a manifold pressure pick-up available, but if not, seek the help or advice of a mechanic to install one into the boost pipe or plenum chamber.

NOTE: the MF-1 uses MAP to operate all functions and therefore requires an accurate reading to function efficiently.

10. Check all connections, then reconnect the negative terminal of the battery. Your MF-1 is now installed!

● OPERATION

The **MICROTECH MF-1** operates by collecting information on engine revs and turbo boost pressure, and uses this information to switch on auxiliary injectors and/or accessories under certain engine conditions. Since the MF-1 can be used on any turbocharged engine, it first needs to be set for the type of engine it is fitted to. Set the 4-way "CYL SET" dip switch to the appropriate setting for your engine: 4, 6, 8, or 12 cylinder (refer DIAG.) Rotary engines should be set to the 4 cylinder position.

1. AUXILIARY INJECTOR START

The MF-1 senses the ignition pulse from the vehicle's coil, and sets the auxiliary injector to fire in sequence with the engine revs at the rate of 1 pulse / rev.

To set the switch-on point, use a screwdriver to adjust the trimpot labelled "AUXILIARY INJECTOR START", turning:

- anti-clockwise to switch on at lower boost (from 0 PSI)
- clockwise to switch on at higher boost (up to 22 PSI)

Adjust the trimpot up or down until the "AUXILIARY INJECTOR ON" light comes on as you reach the desired boost pressure.

Once the switch-on point has been set, the auxiliary injector will switch on when boost reaches the set level, stay on above that level, and switch off again as boost drops back below it.

The "ENRICHMENT" trimpot allows you to control the rate of the fuel being supplied by the auxiliary injector. To adjust the trimpot, turn:

- anti-clockwise for less fuel
- clockwise for more fuel (Left is Lean, Right is Rich)

2. CHANNEL 1

The second programmable channel on the MF-1 allows you to switch on a device at a different boost level to the auxiliary injector start point (ideal for such features as water/methanol injection).

It acts completely independently and has no effect on the auxiliary injector.

To set the CHANNEL 1 switch-on point, adjust the CHANNEL 1 trim pot in the same way as described above for the AUXILIARY INJECTOR switch-on point. (NOTE: the device on CHANNEL 1 is not affected by the "ENRICHMENT" adjustment).

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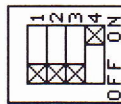
1

INJECTORS

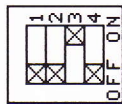
NOTE USE ONLY -

- 1 X 1 OHM INJECTORS
 - 2 X 2 OHM INJECTORS
 - 4 X 12 OHM INJECTORS
- PER INJECTOR DRIVE

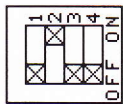
CYL SET 4 CYL & ROTARY



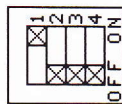
CYL SET 6 CYL



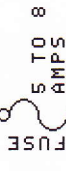
CYL SET 8 CYL



CYL SET 12 CYL



IGN 12V



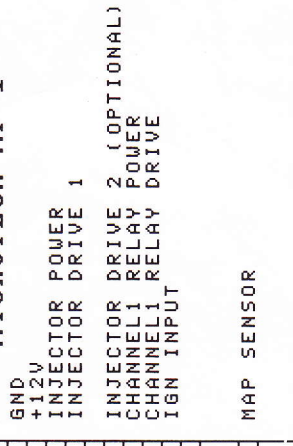
BLACK

SPARE

PINK

GREEN

MICROTECH MF-1



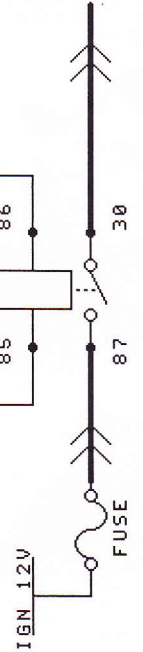
WHITE

-VE SIDE OF COIL



EXISTING IGN 12V

CHANNEL 1 RELAY (OPTIONAL)



MICROTECH MF-1

Size	Number	DRAWING A	Revision
A4			1
Date:	9-APR 1995		Sheet 1 of 1
File:	MF-1/1		Drawn By: DOM

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