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PRO-14R (V2)

4 CHANNEL DIRECT FIRE IGNITION FOR FACTORY ECU'S & PLUG IN REPLACEMENTS

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ERRORS TO SALES@MWIGNITIONS.COM

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CAUTION

**THIS WIRING DIAGRAM IS
APPLICABLE ONLY TO IGNITION
SYSTEMS WITH THE SERIAL
NUMBER PREFIX STARTING**

57xxxx

**USE OF INCORRECT DIAGRAM
WILL VOID WARRANTY AND
MAY DAMAGE UNIT**

INSTALLATION NOTES

MOUNTING

Do not mount the unit where it will be exposed to water or other liquids and ensure the bottom drain slots are unobstructed. Select a location away from excessive heat and provide a cooling air supply if required. Use soft rubber (40 duro) mounts on all four corners to isolate from strong vibration.

IGNITION LEADS & SPARKPLUGS

Straight metal wire ignition leads radiate electrical interference which may cause erratic operation of nearby electronic devices including the CDI. Carbon suppressed ignition leads are not capable of conducting CDI energy levels without damage.

For best performance use spiral wound inductively suppressed metal core ignition leads such as those produced by Magnecor[®]. Where possible use non resistor spark plugs as they will significantly reduce spark energy loss. **Resistive plugs must be used with COP style coils!**

WIRING & POWER SUPPLY

Trigger input & coil output numbers indicate ignition sequence not cylinder number.

250mJ and larger Pro-Drag CDI systems must not be operated below 13V.

Voltage boosters may limit CDI operation and ignition performance will not increase when units are operated above 13.8V

Connect the CDI directly to the battery with the recommended gauge wire. All coil negative wires must be joined at or in the connector. Failure to install recommended fuse will void warranty.

Use twisted pair wire for all power and coil connections. To comply with Australian EMC 'C Tick' standards and for ultimate noise suppression use shielded twisted pair wire.

TRIGGERING

(NOT APPLICABLE TO RELUCTOR TRIGGER IGNITIONS)

All M&W CDI systems are edge triggered and default to falling edge ignition, to select rising edge ignition connect the 'Trigger Edge' pin to the 'Signal Ground' pin. Dwell or duty cycle settings do not effect the CDI operation or performance.

Where the ecu contains an in built igniter or there is an igniter between the ECU and CDI it may be necessary to select rising edge ignition.

For Autronic® multiplex ignitions set the ecu for –VE Edge (Pulse).

THE TRIGGER EDGE ON THE CDI MUST BE SET THE SAME AS THAT IN THE ECU.

LED INDICATOR

After initially applying power to the CDI the LED will illuminate for 1 second to indicate normal operation then extinguish. The LED will then flash briefly with each consecutive trigger event received.

A repeated double flash of the LED indicates a possible faulty ignition coil, faulty wiring, low supply voltage or damage to the CDI.

TESTING

The CDI may be tested by momentarily grounding the inputs (with the exception of Reluctor trigger cdi's where the input must go below ground to trigger the unit), this will cause the corresponding ignition coil to spark. Do not conduct this test without a grounded sparkplug installed.

CAUTION

TO PREVENT IGNITION COIL DAMAGE DO NOT FIRE THE CDI WITHOUT A GROUNDED SPARK PLUG AND DO NOT MAKE THE SPARK JUMP AN EXCESSIVE GAP

CHECK IGNITION TIMING AFTER COMPLETION

IGNITION COILS

COIL SELECTION

Most inductive ignition coils will work with CDI systems however for ultimate ignition energy use a coil specifically designed for CDI applications.

COP COILS

COP (coil on plug) coils with inbuilt drivers are not suitable for use with CDI ignition. Small COP coils designed for inductive ignition may overheat when used in cdi applications.

COP coils must be used with resistive spark plugs.

FERRITE CDI COILS

Be aware when buying ferrite CDI coils from other suppliers who do not have the knowledge or experience to correctly prepare them for automotive use. Due to their fragile nature and poor quality control during manufacture it is easy to experience premature ignition coil failure and engine misfiring unless correctly assembled. All coils prepared by M&W are individually tested before sale.

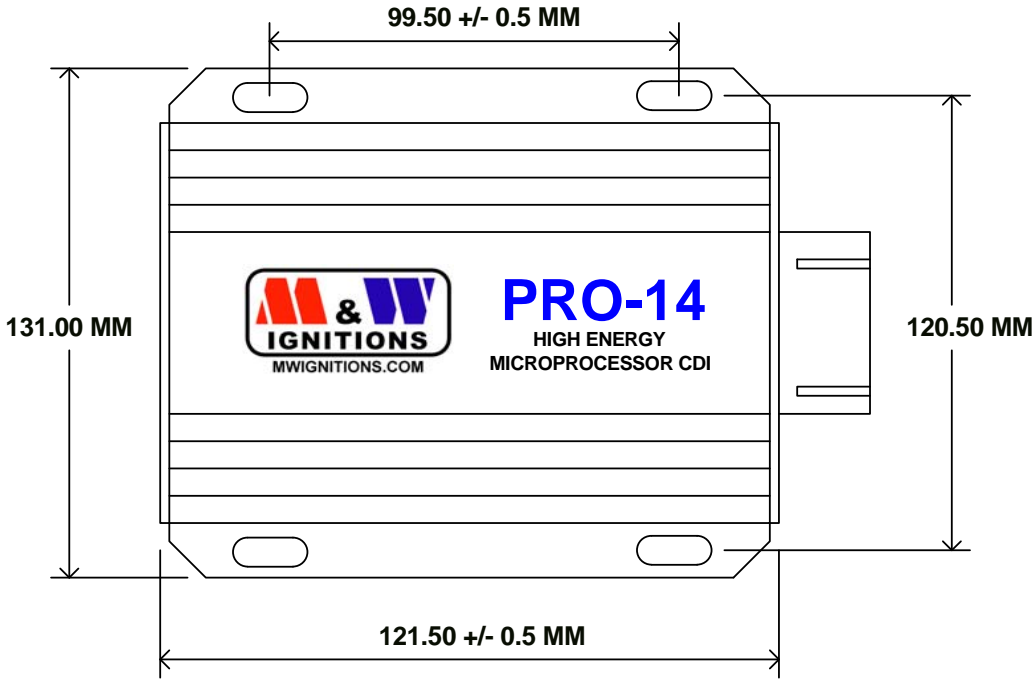
Note! Ferrite CDI coils are for direct fire ignition only. For high performance distributor applications use a coil similar to a Crane[®] PS92 or MSD[®] HVC2 coils.

COIL POLARITY

For correct operation inductive ignition coils should be wired with their primary connections reversed to maintain correct spark plug polarity.

CAUTION!

IGNITION COIL DAMAGE MAY OCCUR IF OPERATED WITH AN EXCESSIVE SPARK GAP.



1.1

Slot dimensions - 5mm * 10mm

Title		MOUNTING DIMENSIONS	
Size	Number	Revision	
A4	SERIES 3	1.2	
Date:	12-Sep-2010	Sheet 1 of	1
File:	D:\M&W\Rotary mounting dimensions.scd Drawn By: M&W		



DISCONNECT POWER BEFORE WORKING ON UNIT

VIEWED FROM BACK OF CONNECTOR



TRIGGER EDGE SELECTION

Falling edge ignition - leave pin #9 disconnected.
 Rising edge ignition - connect pin #9 to pin #10.
 When triggering this unit of an existing ignition module or an ecu with built in igniters such as the Microtech 'MTX' series it may be necessary to select rising edge trigger.

SPECIFICATIONS

Supply voltage = 13.8V DC negative ground
 Operating voltage = +6V to +18V (Restrictions apply)
 Maximum supply current = 7.5A
 Off current < 700uA
 Maximum speed = 10,500 RPM
 Coil primary voltage = 480V
 Spark energy = 115 millijoules/plug
 Trigger = 10mA open collector drive
 Ignition split = 0 to infinity
 Tacho = 12V, 25mA square wave
 Maximum continuous operating temperature = 105°C

KEEP ALL INPUTS WELL SEPARATED FROM COIL OUTPUTS

1 +12V (Battery)	7 Ground (Battery)	13 Trailing 2
2 +12V (Battery)	8 Ground (Battery)	14
3 Trailing 1	9 Trigger edge	15 Leading
4 Tacho	10 Trigger edge	16 Ignition switch
5 Coil C +	11 Coil B +	17 Coils C & D -
6 Coil A +	12 Coil D +	18 Coils A & B -

Title THREE CHANNEL DIRECT FIRE ROTARY		
Size A4	Number Pro-14R S3	Revision 1.0
Date: 12-Sep-2010	Sheet 1 of 1	Drawn By: M&W
File: D:\M&W\Rotary_S3_1.sch		

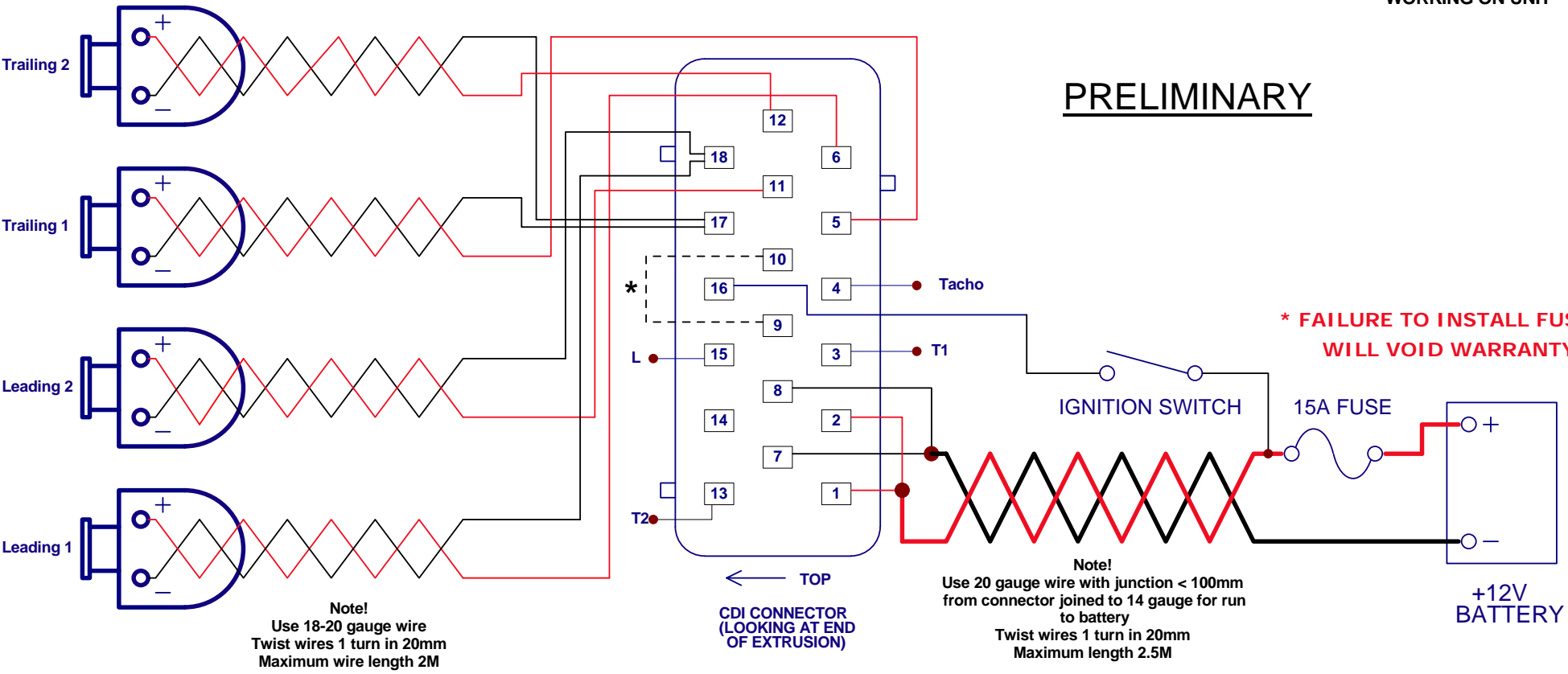
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Performance & Quality since 1996

**CAUTION!
HIGH VOLTAGE**

DISCONNECT POWER BEFORE
WORKING ON UNIT

* See instructions for trigger edge selection link



PRELIMINARY

This ignition system is designed to decode the standard 3 ignition channels and provide 4 channel direct fire ignition for factory ecu's and after market plug in replacements.

Title			THREE CHANNEL DIRECT FIRE ROTARY		
Size	Number			Revision	
A4	Pro-14R S3			1.1	
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File:	D:\M&W\Rotary_S3_2.sch	Drawn By:		M&W	

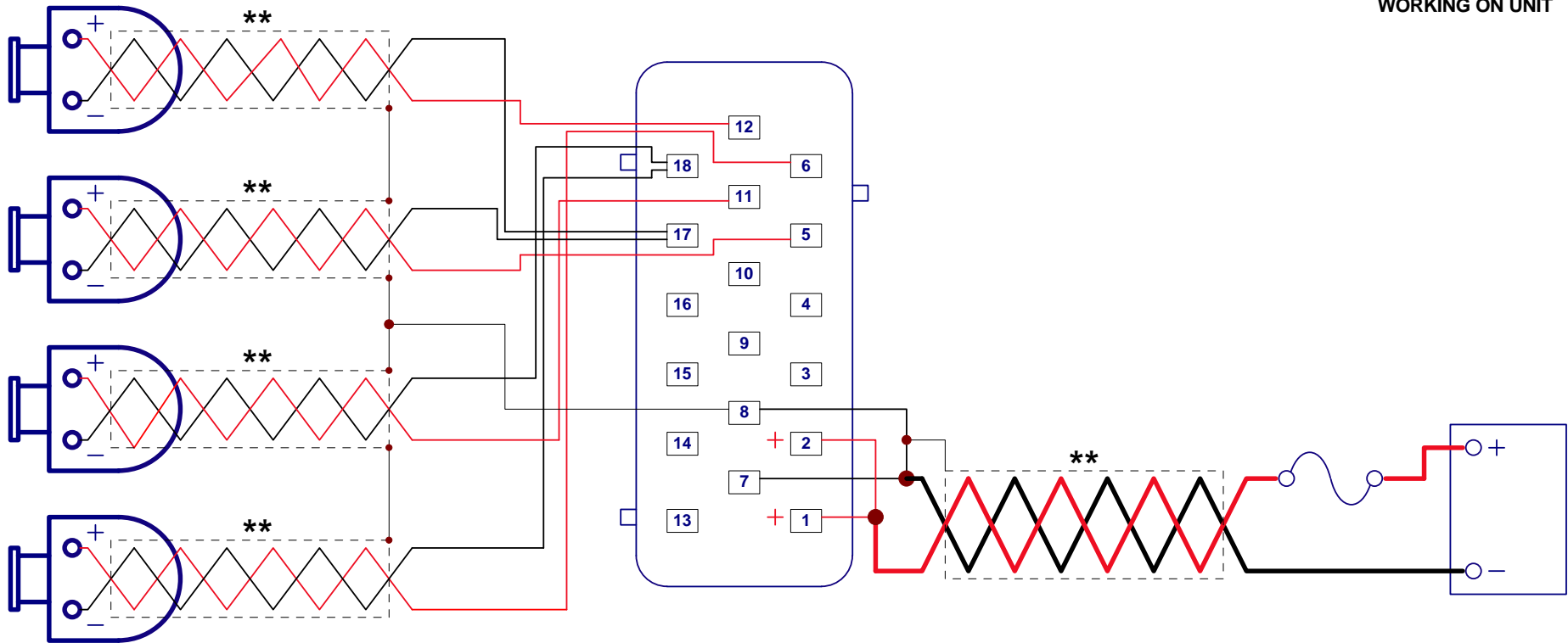
M & W IGNITIONS

Performance & Quality since 1996

CAUTION!
HIGH VOLTAGE



**DISCONNECT POWER BEFORE
WORKING ON UNIT**



**** Shielded cables required for Australian EMC compliance**

Title	AUSTRALIAN EMC REQUIREMENTS		
Size	Number	Revision	
A4	Pro-14R S3	1.2	
Date:	12-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\Diagrams\Rotary S3 Vb\EMC.sch Drawn By: M&W		