



# **PRO-14b**

## **4 CHANNEL CAPACITOR DISCHARGE IGNITION**

PLEASE REPORT ANY ERRORS  
SALES@MWIGNITIONS.COM

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# **CAUTION**

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

**51xxxx**

**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<sup>®</sup>. 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.

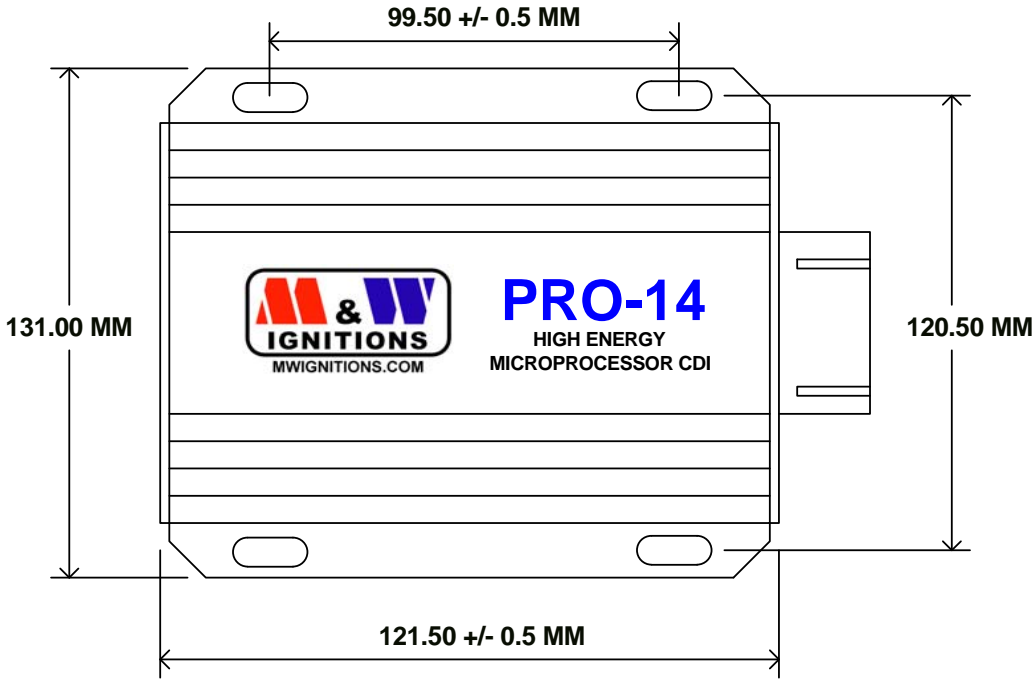
**Note!** Ferrite CDI coils are for direct fire ignition only. For high performance distributor applications use a coil similar to a Crane<sup>®</sup> PS92 or MSD<sup>®</sup> HVC2 coils.

## 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.**



Slot dimensions - 5mm \* 10mm

Title		<b>MOUNTING DIMENSIONS</b>	
Size	Number	Revision	
A4	<b>SERIES 3</b>	1.2	
Date:	12-Sep-2010	Sheet 1 of	1
File:	D:\M&W\Pro-14b mounting dimensions		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 = +5.5V to +15V  
 Maximum supply current = 6.0A  
 Power off current < 700uA  
 Maximum ignition frequency = 1,000 Hz  
 Coil primary voltage = 460V  
 Spark energy = 115 millijoules per coil  
 Trigger = 10mA adjustable edge  
 Tacho = 12V, 25mA square wave  
 Maximum allowable case temperature = 105°C  
 Dimensions = 130L \* 130W \* 40H  
 Weight = 870gm

**KEEP ALL INPUTS WELL SEPARATED FROM COIL OUTPUTS**

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

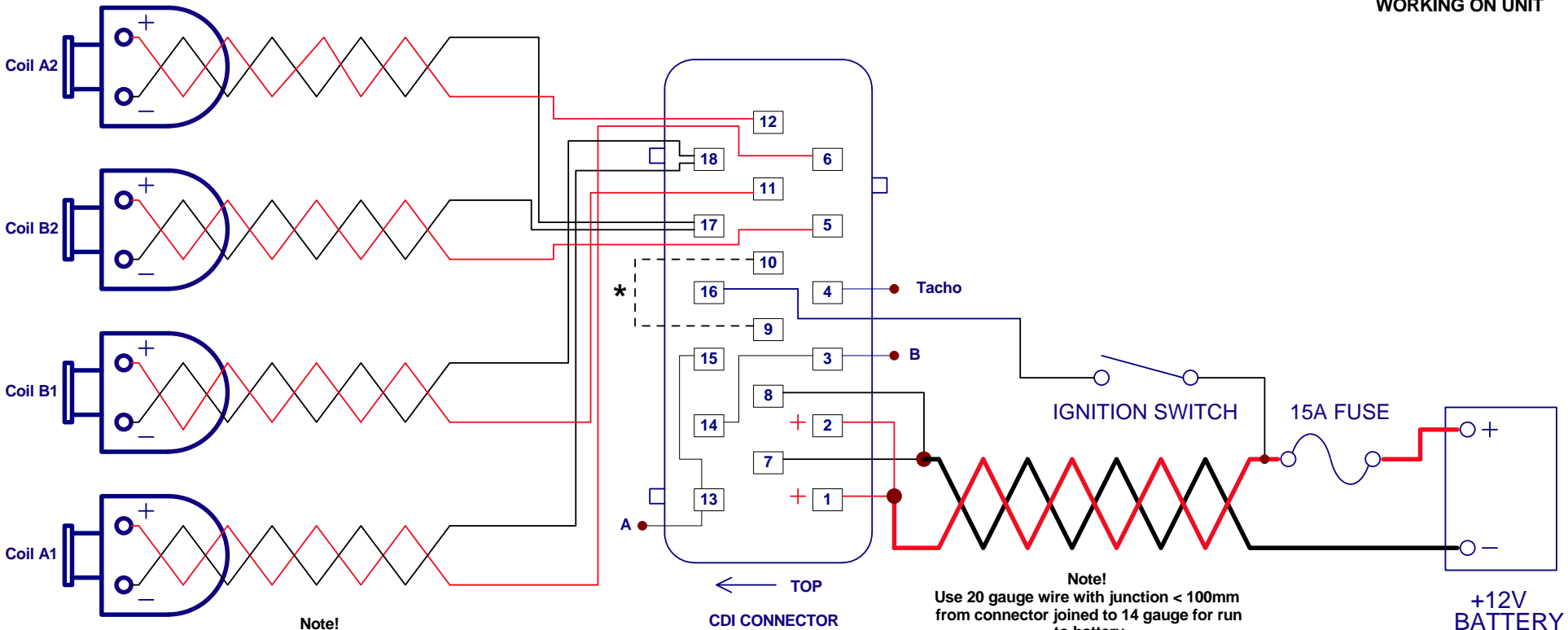
Title			<b>FOUR CHANNEL CDI IGNITION</b>		
Size	Number	Revision			
A4	<b>PRO-14b S3</b>	1.2			
Date:	12-Sep-2010	Sheet 1 of	1		
File:	D:\M&W\...\Pro14b_S3_1.sch	Drawn By:	M&W		

# M & W IGNITIONS

Performance & Quality since 1996



**DISCONNECT POWER BEFORE WORKING ON UNIT**



**Note!**  
Use 18-20 gauge wire  
Twist wires 1 turn in 20mm  
Maximum wire length 2M

**Note!**  
Use 20 gauge wire with junction < 100mm  
from connector joined to 14 gauge for run  
to battery  
Twist wires 1 turn in 20mm  
Maximum length 2.5M

\* See specifications for use of trigger edge selection link

Title		<b>FOUR COIL TWO TRIGGER IGNITION</b>	
Size	Number	Revision	
A4	<b>PRO-14b S3</b>	<b>1.2</b>	
Date:	12-Sep-2010	Sheet 1 of 1	
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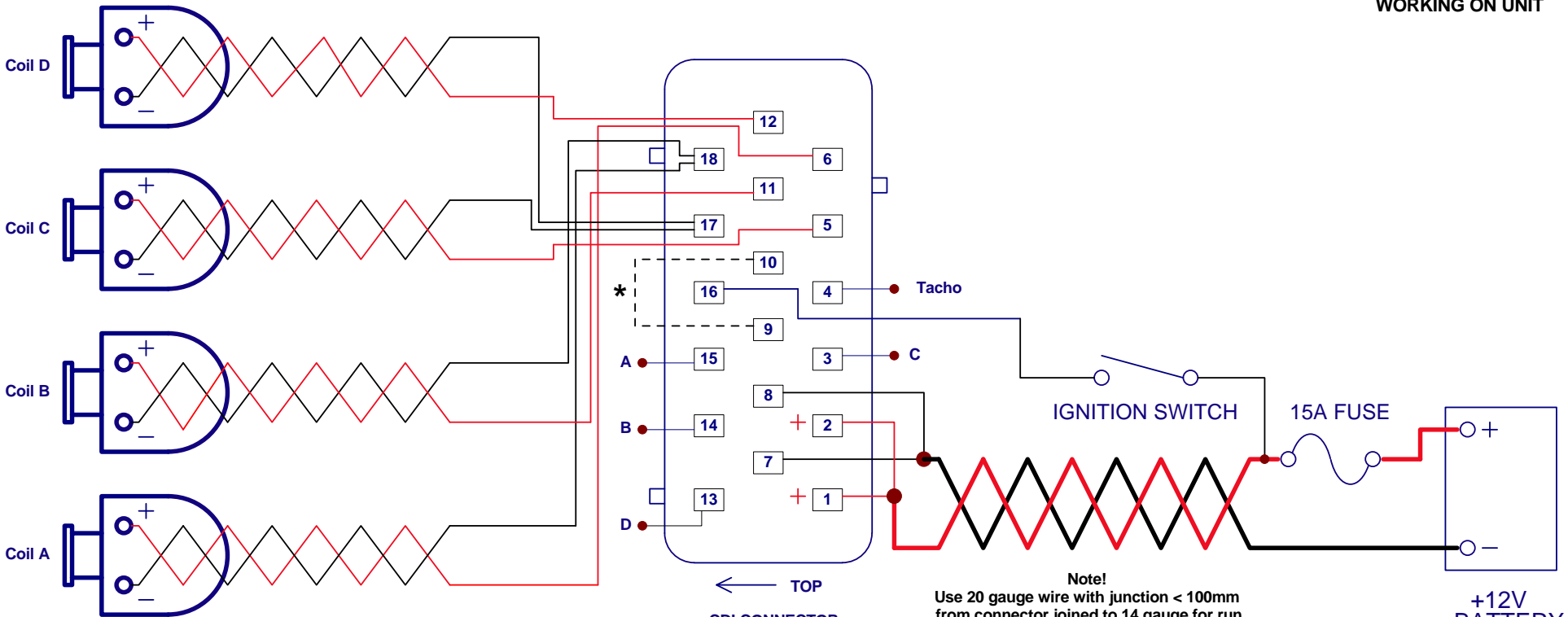


# M & W IGNITIONS

Performance & Quality since 1996



**DISCONNECT POWER BEFORE WORKING ON UNIT**



**Note!**  
Use 18-20 gauge wire  
Twist wires 1 turn in 20mm  
Maximum wire length 2M

**Note!**  
Use 20 gauge wire with junction < 100mm  
from connector joined to 14 gauge for run  
to battery  
Twist wires 1 turn in 20mm  
Maximum length 2.5M

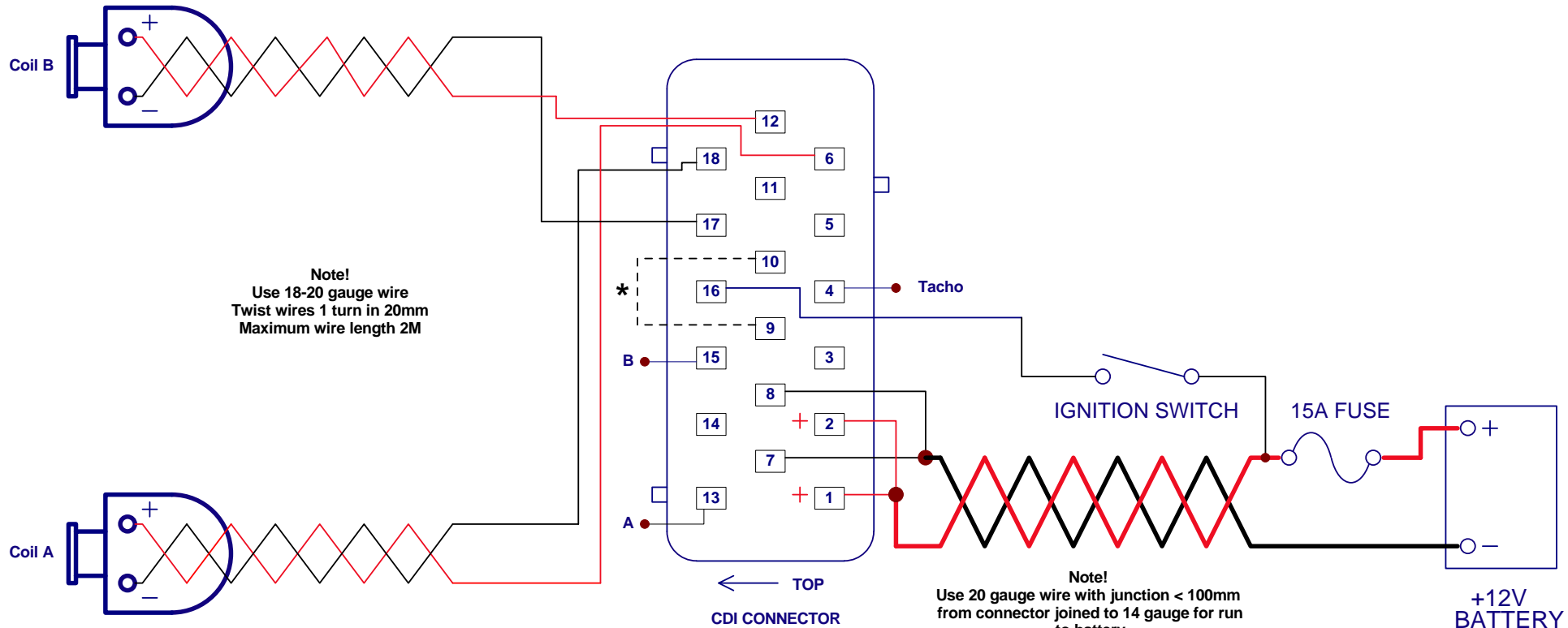
\* See specifications for use of trigger edge selection link

Title		<b>FOUR COIL SEQUENTIAL IGNITION</b>	
Size	Number	Revision	
A4	<b>PRO-14b S3</b>	<b>1.2</b>	
Date:	12-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\...\Pro14b_S3_3.sch	Drawn By:	M&W

# M & W IGNITIONS

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**CAUTION!**  
**HIGH VOLTAGE**



**Note!**  
Use 18-20 gauge wire  
Twist wires 1 turn in 20mm  
Maximum wire length 2M

**Note!**  
Use 20 gauge wire with junction < 100mm  
from connector joined to 14 gauge for run  
to battery  
Twist wires 1 turn in 20mm  
Maximum length 2.5M

**Note!**  
Input 'A' and Input 'B' may be joined  
where only one ignition trigger is  
available

\* See instructions for use of trigger edge selection link

Title			<b>PORSCHE TWIN PLUG HEAD</b>		
Size	Number	Revision			
A4	<b>PRO-14b S3</b>			<b>1.2</b>	
Date:	12-Sep-2010	Sheet 1 of 1			
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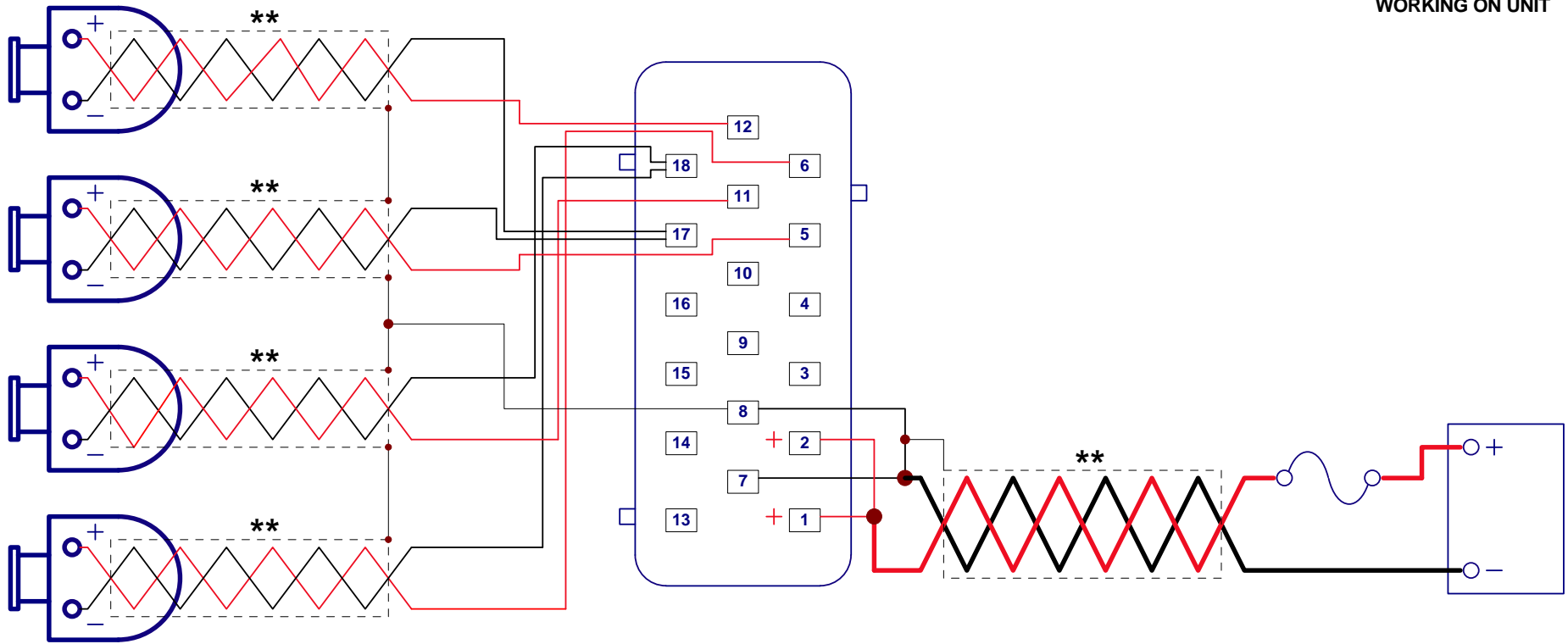
# M & W IGNITIONS

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-14b S3	1.2			
Date:	12-Sep-2010	Sheet 1 of	1		
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