



# **PRO-10**

## **SINGLE CHANNEL**

### **CAPACITOR DISCHARGE**

#### **IGNITION**

PLEASE REPORT ANY OMISSIONS OR  
ERRORS TO SALES@MWIGNITIONS.COM

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2. Ignition coil information
3. Mounting dimensions
4. Connections and specifications
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7. Bosch 3 pin cdi replacement
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# **CAUTION**

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

**42xxxx**

**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 the CDI energy without becoming damaged.

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 to reduce energy loss.

## WIRING & POWER SUPPLY

**FAILURE TO INSTALL THE RECOMMENDED SIZE FUSE WILL VOID WARRANTY**

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 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.

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

All M&W CDI systems defaults to falling edge ignition, to select rising edge ignition connect the 'Trigger Edge' pin to the 'Signal Ground' pin. 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. **The trigger edge on the CDI must be set the same as that in the ECU!**

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

## DWELL

M&W CDI systems are 'edge' triggered which means they are not affected by changes in dwell time. If your ecu requires a dwell time be set then use something small such as 0.5-1mS.

## LED INDICATOR

After initially applying power to the CDI the LED will illuminate for 1 second 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), this will cause the corresponding ignition coil to spark. Do not conduct this test without a grounded sparkplug installed. A comprehensive test procedure document may be found on our web site

[http://www.mwignitions.com/pg\\_data\\_sheets.php](http://www.mwignitions.com/pg_data_sheets.php)

## CAUTION

TO PREVENT IGNITION COIL DAMAGE DO NOT  
FIRE THE CDI WITH AN EXCESSIVE SPARK GAP!

CHECK IGNITION TIMING AFTER COMPLETION

# IGNITION COILS

## COIL SELECTION

Most inductive ignition coils will work satisfactorily 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. COP coils designed for inductive ignition may overheat when used in cdi applications and some contain an internal blocking diode in the secondary winding which must be taken into account during wiring.

## FERRITE CDI COILS

Ferrite core cdi coils provide a light weight solution for direct fire applications and give high secondary current however they may not be suitable for all applications due to their very short arc duration. The high level of EMI emitted by these coils may require additional wire shielding to prevent electrical interference with the ECU.

**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.

## COIL POLARITY

**All diagrams are shown for cdi style coils, for correct operation with inductive ignition coils they 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.**

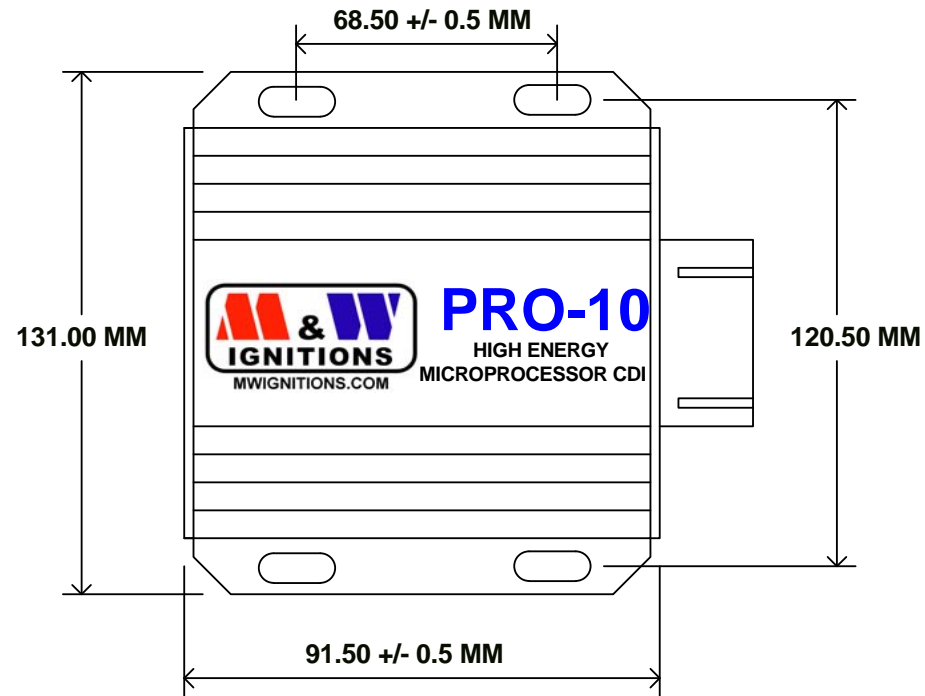
**CAUTION!  
HIGH VOLTAGE**



**DISCONNECT POWER BEFORE  
WORKING ON UNIT**

**M & W IGNITIONS**

Performance & Quality since 1996



**Slot dimensions - 5mm \* 10mm**

Title				<b>MOUNTING DIMENSIONS</b>	
Size	Number	Revision			
A4	<b>PRO-10 SERIES 3</b>	1.0			
Date:	4-Mar-2009	Sheet 1 of	1		
File:	E:\M&W\Pro10_S3_Mounting dimensions	Drawn By:	M&W		



DISCONNECT POWER BEFORE WORKING ON UNIT

VIEWED FROM BACK OF CONNECTOR



FAILURE TO INSTALL FUSE WILL VOID WARRANTY

**POWER LEVEL & TWO SPARK**

Leave power level switch disconnected for 105mJ mode or connected to Pin 10 for 150mJ mode.

Leave twin spark switch disconnected for single spark 1kHz mode or connected to Pin 10 for twin spark 400Hz mode.

Note! It is not possible to have both high power and twin spark active at the same time.

**SPECIFICATIONS**

Supply voltage = 13.8V DC negative ground  
 Operating voltage = +6V to +15V (restrictions apply)  
 Maximum supply current = 6.0A  
 Standby current < 650uA (pin 16 open)  
 Maximum ignition frequency = 1kHz (400Hz in MS mode)  
 Coil primary voltage = 460V/540V  
 Spark energy = 105mJ/150mJ  
 ECU trigger = 5mA adjustable edge  
 PM trigger = 30mA rising edge  
 Tacho = 12V, 25mA square wave  
 Maximum allowable case temperature = 105°C  
 Dimensions = 91L \* 110W \* 40H  
 Weight = 500gm

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

1 +12V (Battery)	7 Ground (Battery)	13 Power level (P)
2 +12V (Battery)	8 Ground (Battery)	14 Trigger B (P/M)
3 Two spark (M)	9 Trigger edge	15 Trigger A (ECU)
4 Tacho	10 Signal ground	16 Ignition switch
5	11	17
6 Coil A +	12	18 Coil A -

Title <b>PRO-10 SINGLE CHANNEL CDI IGNITION</b>		
Size A4	Number <b>SERIES 3</b>	Revision 1.2
Date: 4-Mar-2009	Sheet 1 of 1	
File: E:\M&W\...\Pro10_S3_1.sch	Drawn By: M&W	

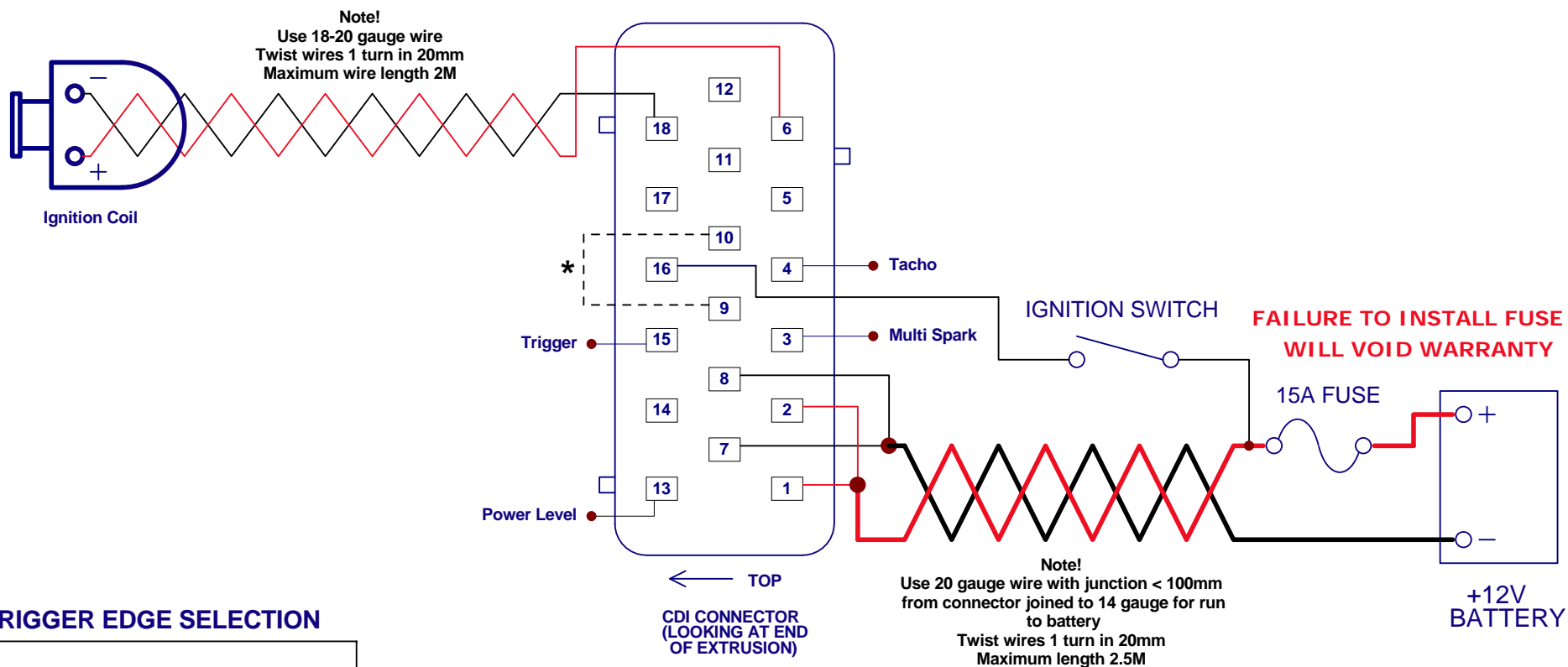
# M & W IGNITIONS

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



**DISCONNECT POWER BEFORE  
WORKING ON UNIT**



## \* TRIGGER EDGE SELECTION

Falling edge ECU trigger - leave pin #9 disconnected.

Rising edge ECU trigger - connect pin #9 to pin #10.

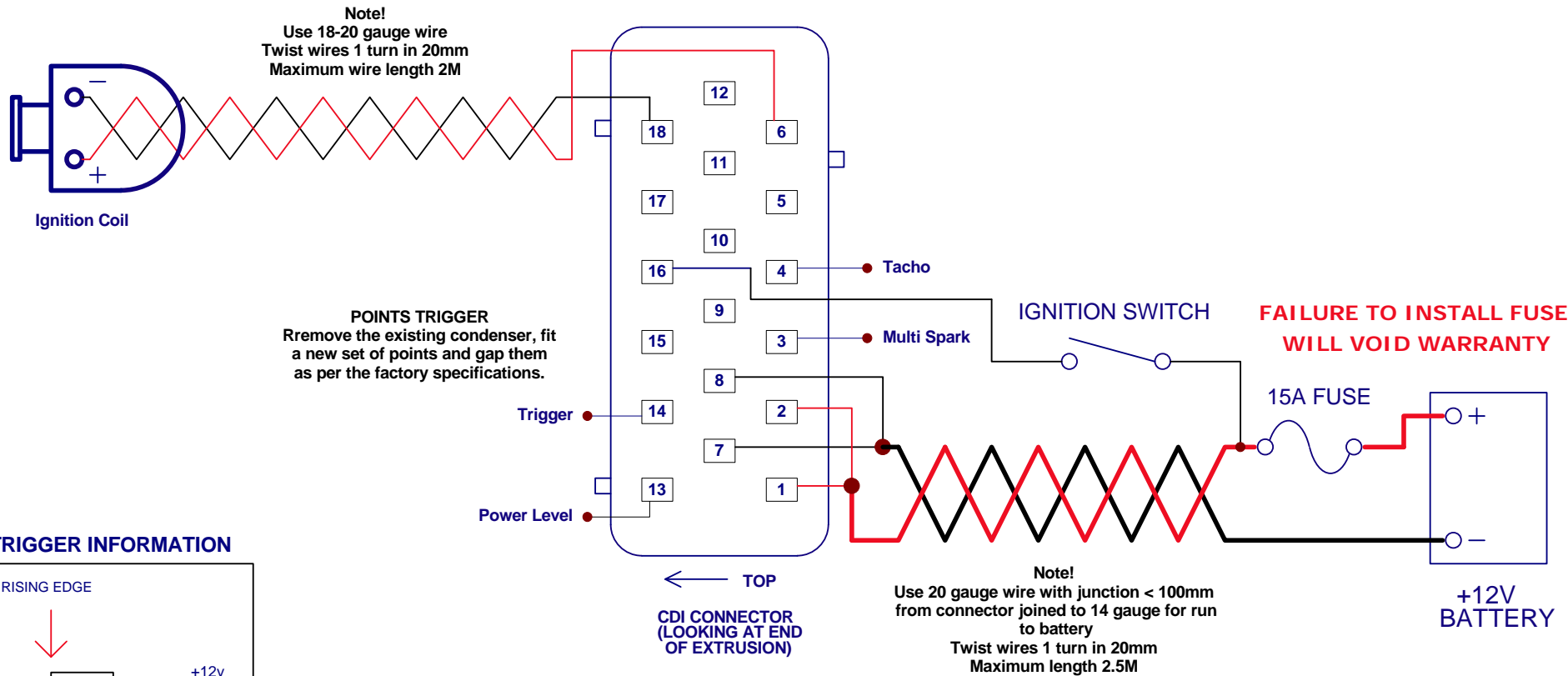
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Size	Number	Revision			
A4	PRO-10 SERIES 3	1.2			
Date:	4-Mar-2009	Sheet 1 of	1		
File:	E:\M&W\...\Pro10_S3_2.sch	Drawn By:	M&W		

# M & W IGNITIONS

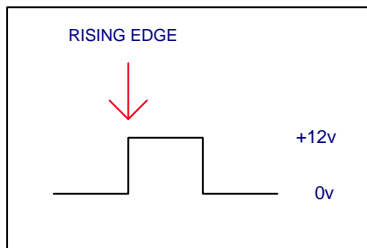
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**CAUTION!**  
**HIGH VOLTAGE**

DISCONNECT POWER BEFORE  
WORKING ON UNIT



### TRIGGER INFORMATION



Title			
<b>POINTS / MODULE TRIGGER IGNITION</b>			
Size	Number	Revision	
A4	<b>PRO-10 SERIES 3</b>	<b>1.3</b>	
Date:	8-May-2009	Sheet 1 of	1
File:	E:\M&W\...\Pro10_S3_3.sch	Drawn By:	M&W

**CAUTION!  
HIGH VOLTAGE**



**DISCONNECT POWER BEFORE  
WORKING ON UNIT**

**M & W IGNITIONS**

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**IMPORTANT INSTALLATION NOTES!**

**MOUNTING**

For best reliability it is suggested the unit be mounted under the rear seat where it will not be exposed to water or extremes of temperature.

**WIRING**

If the terminals in the factory cdi connector are corroded or damaged splice the extension harness onto the existing wiring rather than use the supplied adapting connector. Do not solder wire to terminals as this may weaken the terminals.

This diagram is only for people wishing to retain the factory wiring harness. For performance installations of if the vehicle is being re-wired please refer to the Points/Module diagram and use all connections as shown there.

**IGNITION LEADS**

The standard plain wire ignition leads **MUST** be replaced with a set of premium quality spiral wound metal conductor ignition leads.

**IGNITION COIL**

Use either the factory CDI coil , a Bosch MEC718 transformer style coil or a Crane LX92 coil.

**SPARK PLUGS**

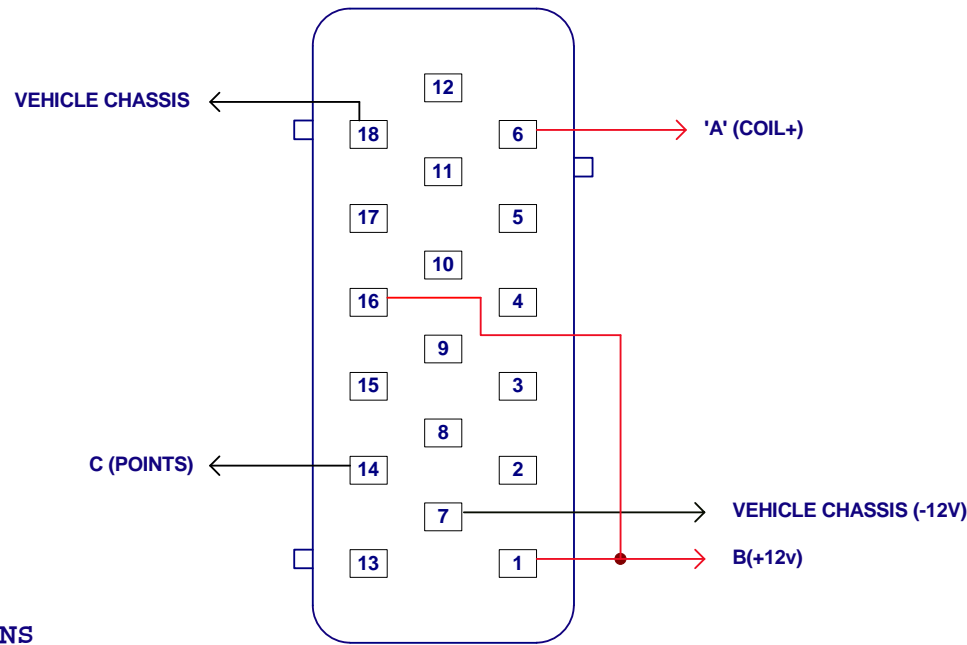
Use the recommended heat range plug gapped to 1.5mm (0.060"). If misfiring is evident reduce the gap accordingly. Resistor plugs should no longer be required.

**TACHO**

The vehicle may be fitted with either a low voltage or high voltage tachometer. The M&W CDI tachometer output provides a 12 square wave signal which will activate most OEM and aftermarket tachometers. If the tachometer fails to function seek the advice of a competent auto electrician or automotive instrument maker. If it is suspected that a high voltage tachometer is fitted, **AT YOUR OWN RISK**, you may try connecting it to the coil+ terminal.

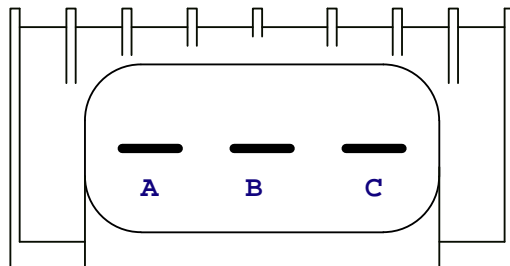
**LED INDICATOR**

The LED indicator will illuminate for approximately one second when power is applied to pin #6, it will then flash with each consecutive trigger pulse. In event of an internal high voltage failure the LED will repeatedly double flash.



← TOP  
CDI CONNECTOR  
(LOOKING AT END  
OF EXTRUSION)

**FACTORY CONNECTIONS**



Title <b>BOSCH '3' PIN CONNECTION</b>			
Size A4	Number <b>PRO-10 SERIES 3</b>	Revision 1.0	
Date: 4-Mar-2009	Sheet 1 of 1		Drawn By: M&W
File: E:\M&W\...\Pro10_S3_B3.sch			

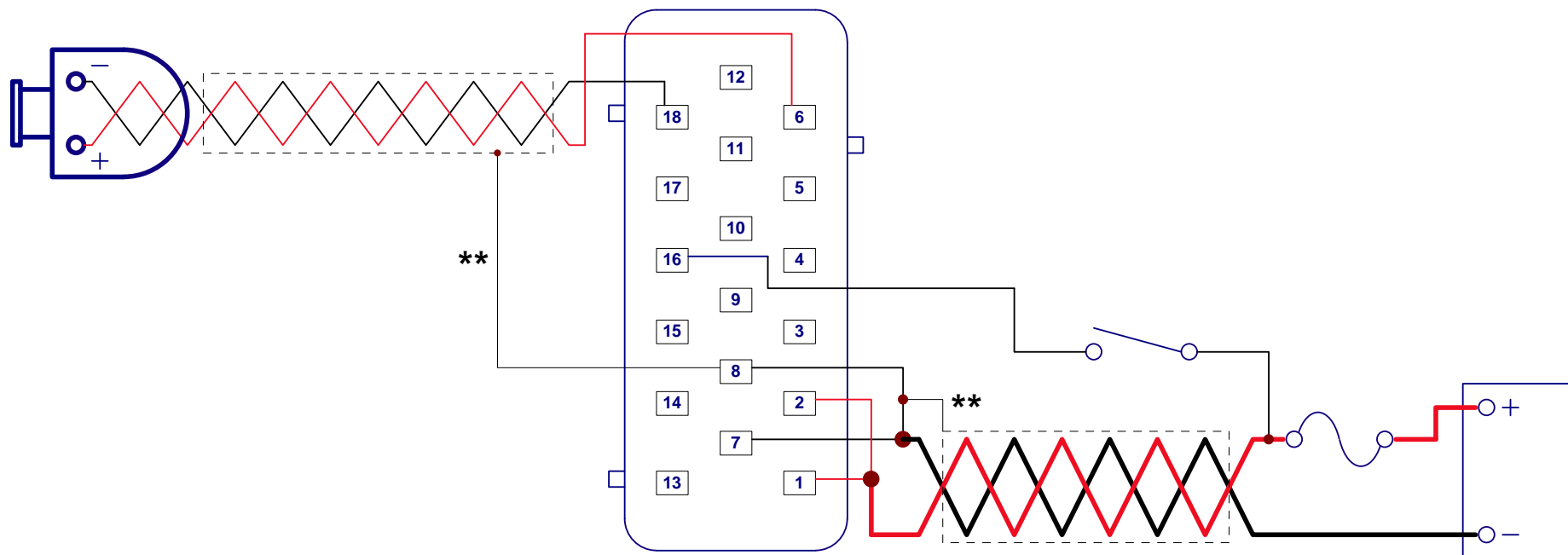
# M & W IGNITIONS

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**DISCONNECT POWER BEFORE  
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**\*\* Shielded cables required for Australian EMC compliance**

Title				AUSTRALIAN EMC COMPLIANCE	
Size	Number	Revision			
A4	PRO-10 SERIES 3	1.0			
Date:	4-Mar-2009	Sheet 1 of	1		
File:	E:\M&W\Diagrams\Pro-10 S3\EMC.sch	Drawn By:	M&W		