WWW.MWIGNITIONS.COM

PRO-10R

RELUCTOR TRIGGER CAPACITOR DISCHARGE IGNITION

PLEASE REPORT ANY ERRORS
SALES@MWIGNITIONS.COM

CONTENTS:

CAUTION

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

44xxxx

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 Reluctor CDI systems fire on the negative direction zero crossing point, see page 6 for a more in depth explanation.

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 reluctor CDI may not trigger by grounding the input, in this case you will need to provide an AC signal such as that generated by a reluctor distributor. 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**

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® PS92 or MSD® HVC2.

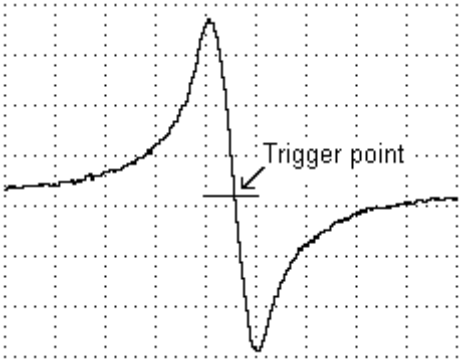
COIL POLARITY

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.

RELUCTOR IGNITION INSTALLATION



The diagram above shows the oscilloscope trace of a typical reluctor sensor with correct polarity. Triggering occurs on the negative going zero crossing point.

A simple polarity test can be made with a strobe light. Observe the timing while the engine is running then stop and reverse the reluctor connections. The correct polarity will show the most advanced timing. The correct polarity should also show the most stable timing reading.

For MSD reluctor distributors use the Violet wire as R+ and the Orange wire as R- (Note! This is opposite to the MSD documentation).

Always use twisted pair wire for the reluctor connections. For electrically noisy environments it may be necessary to use twisted shielded cable.

Do not route the reluctor wires near any high voltage or high current carrying conductors.

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

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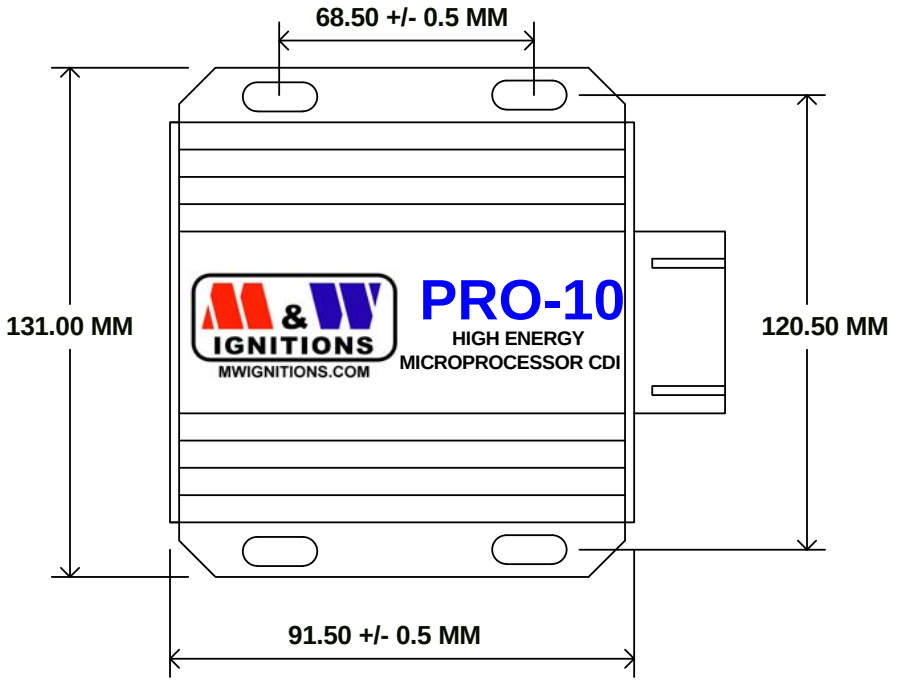

Slot dimensions - 5mm * 10mm

Title	MOUNTING DIMENSIONS		
Size: A4	Number: PRO-10R SERIES 3		Revision: 1.1
Date: 12-Sep-2010		Sheet 1 of 1	
File: D:\M&W\..\Pro10r_S3_Mounting dimensions.sch		Drawn By: M&W	

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VIEWED FROM BACK OF CONNECTOR

KEEP ALL INPUTS WELL SEPARATED FROM COIL OUTPUT

1 +12V (Battery)	7 Ground (Battery)	13 Power level (P)
2 +12V (Battery)	8 Ground (Battery)	14 Reluctor -
3	9	15 Reluctor +
4 Tacho	10 Shield (Ground)	16 Ignition switch
5	11	17
6 Coil +	12	18 Coil -

POWER LEVEL

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

SPECIFICATIONS

Supply voltage = 13.8V DC negative ground
Operating voltage = +6V to +16V (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
Trigger = +/- 120V max
Fires on negative going, zero crossing point
Tacho = 12V, 25mA symmetric square wave
Maximum allowable case temperature = 105°C
Dimensions = 91L * 110W * 40H
Weight = 500gm

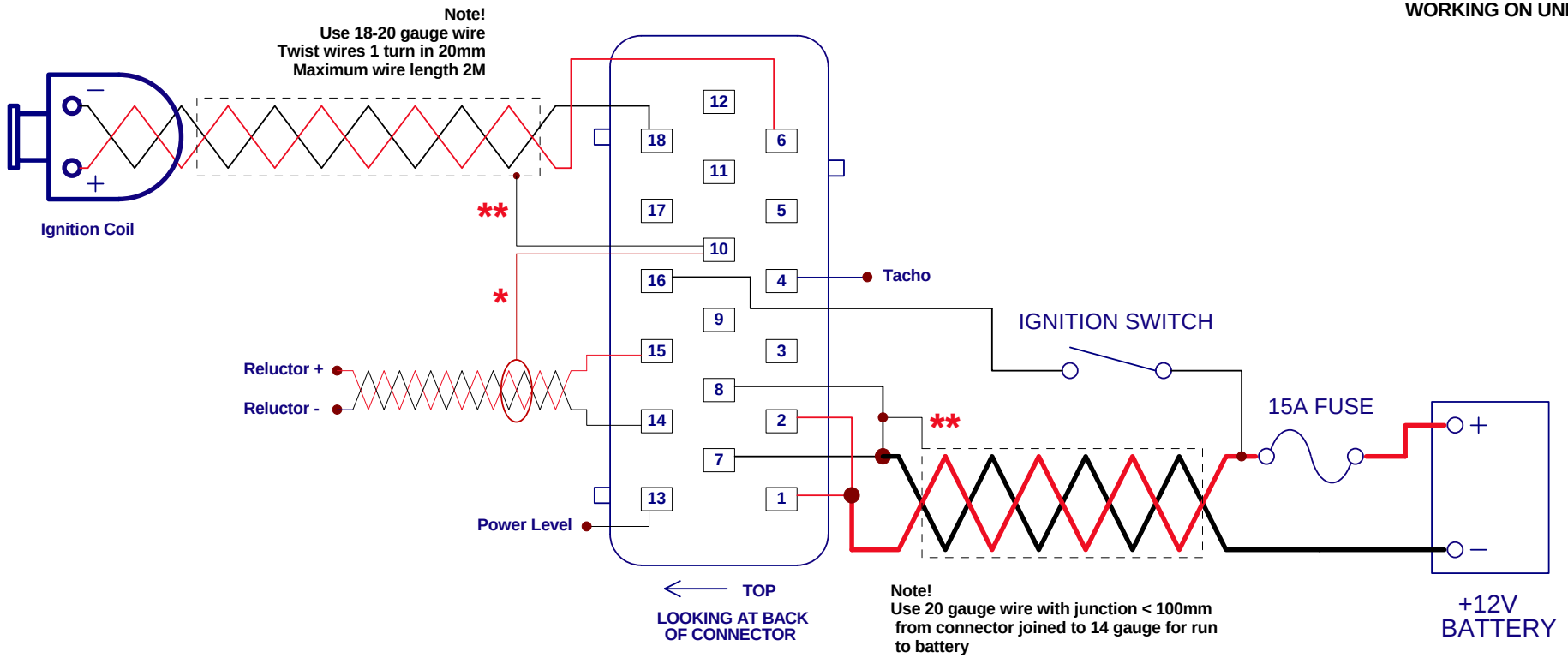
Title	SINGLE CHANNEL RELUCTOR IGNITION	
Size: A4	Number: PRO-10R S3	Revision: 1.3
Date: 12-Sep-2010		Sheet 1 of 1
File: D:\M&W\..\Pro10R_S3_1.sch		Drawn By: M&W

M&W IGNITIONS

Performance & Quality since 1996

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT



* Shielded cable may be required for noisy environments

** Shielded cables required for Australian EMC compliance

Title	RELUCTOR TRIGGER IGNITION		
Size: A4	Number: PRO-10R S3		Revision: 1.2
Date: 12-Sep-2010		Sheet 1 of 1	
File: D:\M&W\..\Pro10R_S3_2.sch		Drawn By: M&W	

CAUTION!
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DISCONNECT POWER BEFORE WORKING ON UNIT

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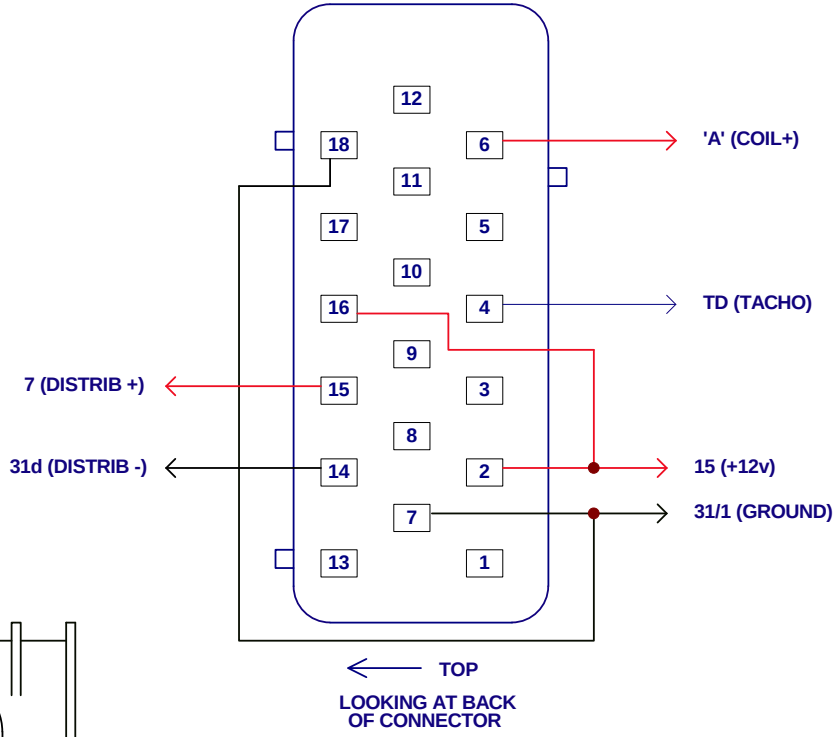
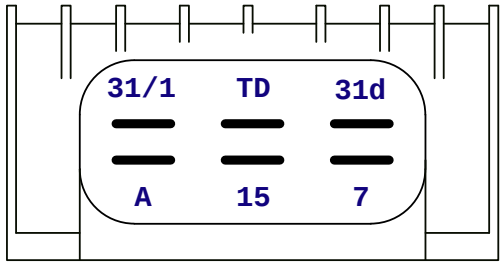


FACTORY CONNECTIONS



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.

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
For best results use either the factory CDI coil , a Bosch MEC717 transformer style coil or a Crane LX92 coil.

SPARK PLUGS
Start with factory recommended spark plug gapped, this may be increased by experimentation up to 1.5mm (0.060"). If misfiring is evident reduce the gap accordingly.

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

REFER TO MAIN INSTALLATION INSTRUCTIONS AT FRONT OF DOCUMENT FOR FURTHER INFORMATION.

NOTE!

The factory wire ignition leads must be replaced - see installation notes.

Title	6 PIN BOSCH CDI CONNECTION		
Size A4	Number PRO-10R S3		Revision 1.3
Date:	12-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\..\Pro10R_S3_B6.sch	Drawn By:	WAG

CAUTION!
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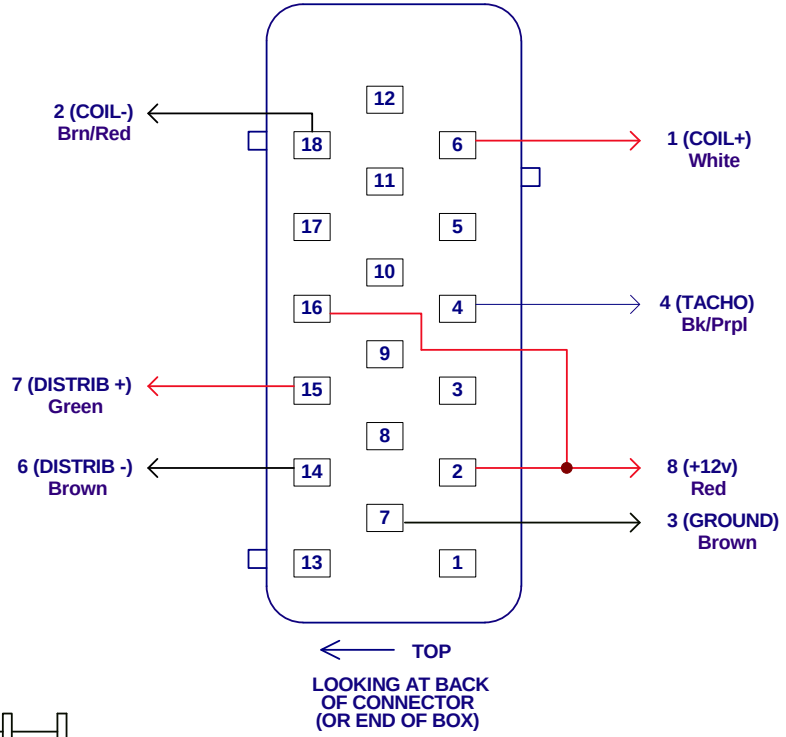
M&W IGNITIONS

Performance & Quality since 1996



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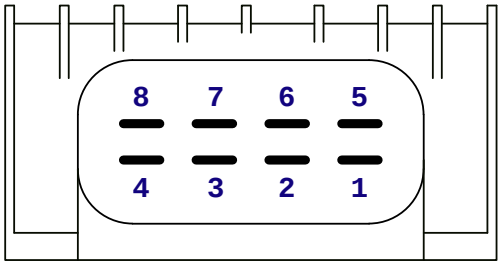
FACTORY CONNECTIONS



NOTE!

The factory wire ignition leads must be replaced - see installation notes.

Title	8 PIN BOSCH CDI CONNECTION		
Size A4	Number PRO-10R S3		Revision 1.2
Date:	12-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\..\Pro10R_S3_B8.sch	Drawn By:	WAG