



Pro-10_{EAL}

ELECTRICAL WIRING & OPERATING INSTRUCTIONS

Applicable
S/No's 42xxxx

**FAILURE TO FOLLOW INSTRUCTIONS
WILL VOID WARRANTY**

CONTENTS:

2. Installation notes
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**ADDITIONAL RESOURCES & UP TO DATE
INSTRUCTIONS AVAILABLE FROM WEBSITE**

INSTALLATION NOTES

(Pro-10e Series 3 systems)

MOUNTING

Mount the unit in a dry location away from intense heat and ensure bottom condensation slots are unobstructed and oriented to permit gravity drain.

Failure to use supplied rubber mounts will void warranty!

IGNITION LEADS

Use inductively suppressed spiral wound metal conductor ignition leads.

Do not use carbon core or unsuppressed metal leads!

SPARK PLUGS

Non resistor spark plugs will greatly enhance ignition performance however some installations will require the use of resistor spark plugs to facilitate correct ECU operation.

When using resistor spark plugs it is imperative to check their internal resistance as part of regular maintenance!

An open circuit or high resistance spark plug may cause damage to spark plug wires, ignition coils and CDI.

Fixed gap surface discharge and semi surface discharge spark plugs are only suitable for naturally aspirated applications.

Keep spark plug gap ≤ 0.025 " (0.6mm) for boosted motors to prevent coil and CDI damage!

INSULATION PRECAUTIONS

Degrease sparkplug insulators, sparkplug boots, ignition coil boots and installation tooling to prevent insulation breakdown.

Use of dielectric grease on sparkplug insulators and inside sparkplug and ignition coil boots will aid installation/removal and help prevent high voltage flashover.

POWER SUPPLY

Do not use voltage boosters, if the vehicle contains a PDM use it only to control CDI switch wire.

Connect ignition supply wires directly to battery!

When using a total loss electrical system install a 16V battery to ensure adequate voltage and isolate when charging.

WIRING

If required power/ground wire length exceeds recommendations use paired battery cable (power and ground) to make up distance. Do not rely on vehicle chassis to provide ground path.

Use twisted pair wire for all power and coil connections. For improved noise suppression or to comply with EMC requirements use twisted shielded wire similar to milspec M27500 series.

M&W CDI systems will open circuit the external fuse if over voltage conditions are experienced.

Failure to install recommended fuse will void warranty!

Main connector pins are designed for roll crimping. Squeeze crimping or soldering will distort pins resulting in misfiring or incorrect CDI operation. Use of dielectric grease in main connector may reduce water ingress.

Keep coil primary wires well separated from HT leads, coil HV outlet, coil body and any ECU wiring!

TRIGGERING

(E)cu input

This input is designed to be driven by either an ECU system or Hall Effect sensor. The default is falling edge triggering however when trigger edge and auxiliary ground terminals are joined it will invert to rising edge triggering

If uncertain of correct setting lock Ecu timing and monitor engine with timing light while varying RPM. Timing should appear stationary with correct trigger edge.

(P)oints/(M)odule input

This input provides an additional current load to prevent point contact oxidation and may not be suitable for ECU or Hall Effect Sensor triggering. The default is (fixed) rising edge triggering.

It is highly recommended a new or unused set of points be installed and correctly gapped when using this input. Remove any points suppression capacitor if fitted.

POWER LEVEL SWITCH

Do not manually activate this feature or operate continuously as it will significantly increase spark plug wear and system current draw. Activate by grounding input through either a 'Hobbs' style manifold pressure switch or programmable output from the ECU only when elevated energy levels are required.

Additional ignition energy may cause an increase in electrical noise!

TUNING

CDI performance is not affected by changes in dwell settings!

M&W CDI systems may reduce ignition delay requiring a reduction in overall ignition timing. The resulting changes in combustion characteristics may also require alterations to fuel flow.

Always set ECU ignition delay to zero in ECU and re-tune both fuel and timing curves after installation!

TACHO OUTPUT

Tacho output provides a 50% duty cycle square wave signal approximately 1V below supply voltage. This will work with most aftermarket digital tachos however some earlier types and those designed for coil negative triggering may not read accurately and require a tach adaptor.

LED INDICATOR

After applying power to input switch wire the LED will illuminate for approximately 1 second then extinguish. It will then flash briefly with each consecutive trigger event received.

A repeated double flash of the LED may indicate 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 trigger inputs which will cause the LED to flash and corresponding ignition coil to spark.

Do not conduct this test without correctly grounded spark plugs installed!

IGNITION COIL SELECTION

Ignition coils designed for inductive ignition or dual purpose use will significantly limit CDI energy output.

For maximum ignition energy use a coil specifically designed for CDI use!

For low rpm (street) and 4 cylinder applications our M&W #COI006 is an ideal choice.

For high rpm and 6/8 cylinder applications a larger coil is required with exposed metal laminations for improved heat dissipation. An ideal coil in this circumstance is the Crane PS92 (FAST92).

Wire inductive coils reverse polarity when used with M&W CDI's.

M & W IGNITIONS

Performance & Quality

CAUTION!
HIGH VOLTAGE



DISCONNECT POWER BEFORE
WORKING ON UNIT

VIEWED FROM BACK OF CONNECTOR



SPECIFICATIONS

Operating voltage	.....	12.5V --> 18V DC
Polarity	.....	Negative ground
Startup voltage	.....	>= 6V
Maximum supply current	.....	7.0A
Power off current	.....	< 700uA
Maximum ignition frequency	.....	1,200Hz
Energy limit:		
Single spark	.....	700Hz
Hi power	.....	550Hz
Coil primary voltage:		
Standard power	.....	460V
Hi power	.....	540V
Spark energy:		
Standard power	.....	115mJ
Hi power	.....	150mJ
Trigger: (E)		
Current	.....	10mA
Edge	.....	Adjustable
Voltage rising	.....	>= 3.2V
Voltage falling	.....	<= 1.6V
Trigger: (PM)		
Current	.....	120mA
Edge	.....	Fixed rising
Tacho output:		
Voltage	.....	Supply - 1.2V
Output current	.....	100mA
Shape	.....	Square wave
Operating temperature	.....	<= 105°C
Dimensions	.....	91L * 110W * 40H
Weight	.....	500gm

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

Title			PRO-10EAL CDI IGNITION		
Size	Number		Revision		
A4	(C) M&W Ignitions		17.04.24.1		
Date:	17-Apr-2024	Sheet	1	of	1
File:	D:\M&W\...\Pro10e S3 1.sch	Drawn By:	WAG		

Wire Specifications

POWER SUPPLY:

Use 14ga wire from battery bifurcated into 20ga wire <= 100mm from connector. Junction is best achieved using a Solistrand or similar butt splice / barrel crimp. Maximum recommended wire length is 2M

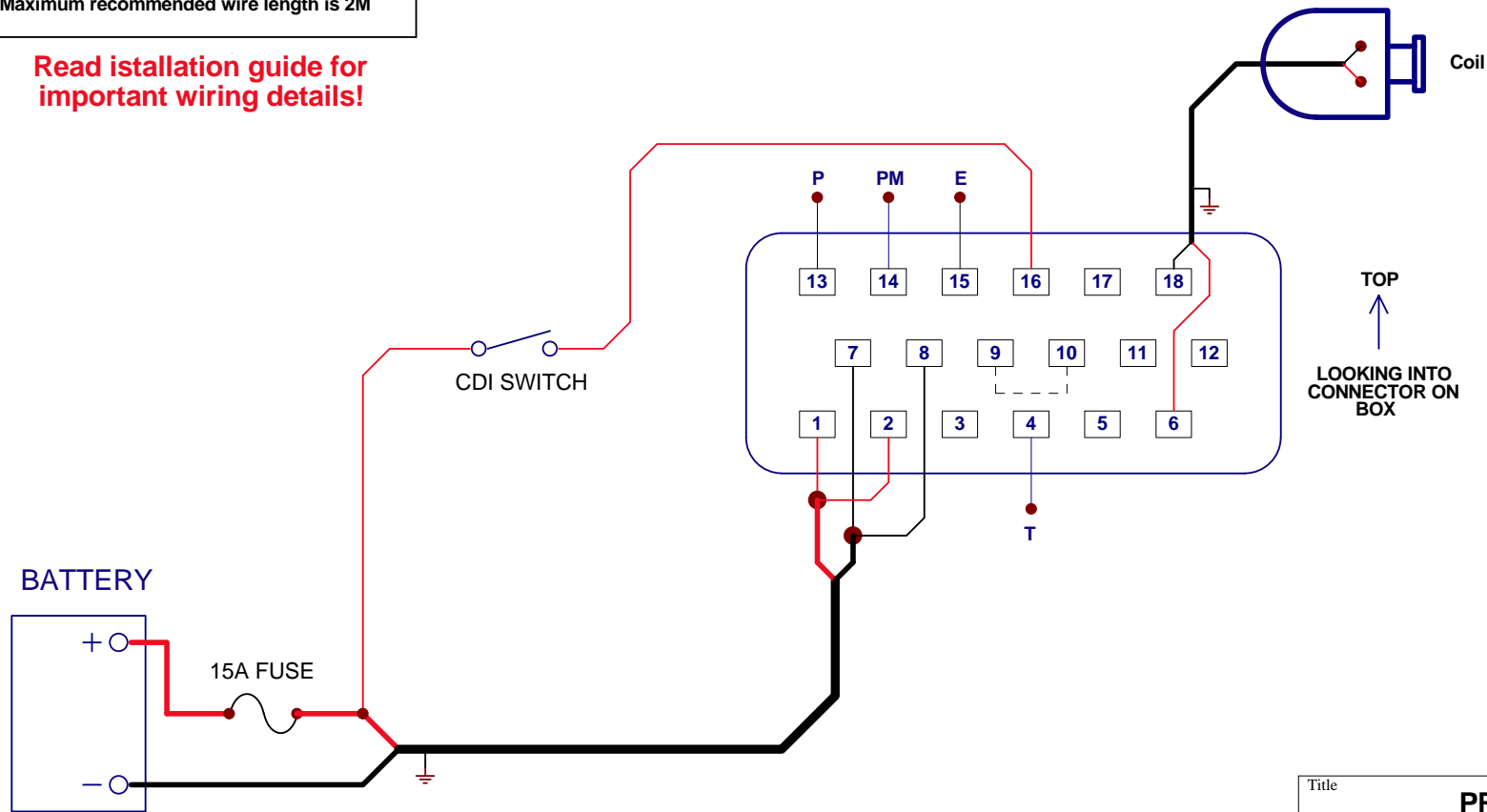
IGNITION COILS:

Use 20ga wire from cdi to coils and keep as one continuous length. Maximum recommended wire length is 2M

Read installation guide for important wiring details!



DISCONNECT POWER BEFORE WORKING ON UNIT



Title			PRO-10EAL ECU TRIGGER		
Size	Number	Revision			
A4	(C) M&W Ignitions	14.04.24.1			
Date:	14-Apr-2024	Sheet	1	of	1
File:	D:\M&W\...\Pro-10e S3 2.sch	Drawn By:	WAG		

M & W IGNITIONS

Performance & Quality

CYL SWITCH	# ENGINE CYLINDERS
0	
1	
2	
3	
4	4
5	
6	6
7	
8	8
9	
A	10
B	
C	12
D	
E	
F	



OPERATION

Limiting range - 2,000 to 19,900 in 100 rpm increments
 To disable rpm limiting select 'zero' for all 'RPM' switches
 CDI power switch must be cycled after making changes to 'CYL' switch
 Engine RPM switches may be changed at any time

WARNING!

**Engines respond differently to RPM limiting
 Set conservative limit at first then increase to desired
 maximum rpm after observing engine response**

Title		REV LIMITER	
Size	Number	Revision	
A4	(C) M&W Ignitions	16.09.18.1	
Date:	16-Sep-2018	Sheet 1 of 1	
File:	D:\M&W\...\Pro10R S3 limiter.sch	Drawn By:	WAG

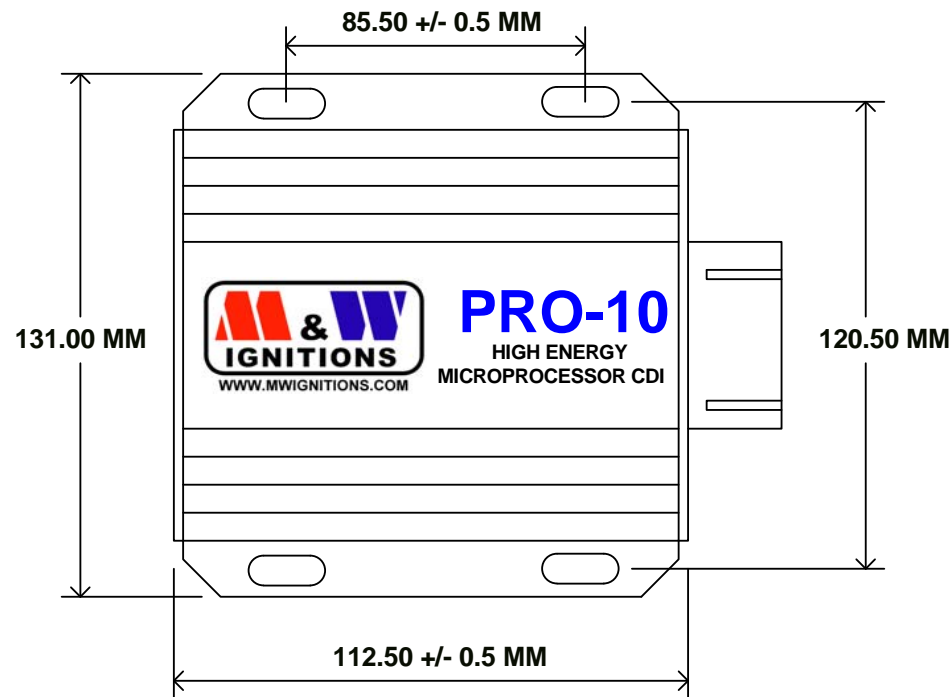
M & W IGNITIONS

Performance & Quality

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HIGH VOLTAGE



**DISCONNECT POWER BEFORE
WORKING ON UNIT**



Slot dimensions - 5mm * 10mm

Title			PRO-10EAL MOUNTING DIMENSIONS		
Size	Number		Revision		
A4	(C) M&W Ignitions		14.04.14.1		
Date:	14-Apr-2024	Sheet	1	of	1
File:	D:\M&W\...\Pro10EAL dimensions.sch		Drawn By:	WAG	