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Pro-Drag6

160/250mJ S3 V2.0

ELECTRICAL WIRING
&
OPERATING INSTRUCTIONS

Applicable
S/No's 390645 +

FAILURE TO FOLLOW INSTRUCTIONS
WILL VOID WARRANTY

CONTENTS:

INSTALLATION NOTES

(Pro-Drag6 250mJ Series 3 V2.0)

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. Ensure a source of cooling air is available.

Failure to use supplied rubber mounts will void warranty!

IGNITION LEADS

Use inductively suppressed spiral wound metal conductor ignition leads. The use of unsuppressed metal leads may cause electrical interference with ecu and/or ignition system.

Do not use carbon core leads!

SPARK PLUGS

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

When using resistor spark plugs measure internal resistance as part of regular maintenance!

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!

INSULATION PRECAUTIONS

Regularly degrease sparkplug insulators, sparkplug boots, ignition coil boots and installation tooling.

Use dielectric grease on sparkplug insulators and inside sparkplug and ignition coil boots.

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 running a total loss electrical system isolate battery when charging.

Reverse polarity connection without recommended fuse installed will damage unit!

WIRING

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

Use twisted shielded wire similar to aerospace/mil-spec M27500 series for all power, coil and trigger wires.

Common coil negative wires must be joined at or in the cdi connector.

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

TRIGGERING

Trigger sequence must alternate between boxes for reciprocating engines.

This unit defaults to falling (negative) edge trigger. To select rising edge (positive) trigger ground 'Trigger Edge' pin by connecting to pin 10.

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

POWER LEVEL SWITCH

Use either a Hobbs style manifold pressure switch or programmable output from ECU to ground input when increased ignition energy required. Pin 13 open = 160mJ, Pin 13 to ground = 250mJ.

TUNING

CDI performance is independent of dwell time!

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

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

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 grounded spark plugs installed!
Failure to heed this may result in damage to the cdi and/or coils!

COIL SELECTION

Use of inductive ignition coils with cdi ignition will limit output energy, for ultimate performance use coils specifically designed for CDI use such as the M&W #COI006. Wire inductive coils reverse polarity when used with M&W CDI's.

The use of COP/Pencil coils of any brand or type will void warranty!

Do not use ferrite coils from Mercury, MSD or Prufex!

M&W IGNITIONS

Performance & Quality

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

VIEWED FROM BACK OF CONNECTOR

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

SPECIFICATIONS

Operating voltage	13V --> 18V DC
Polarity	Negative ground
Startup voltage	>= 8V
Maximum supply current	15A (per box)
Power off current	< 700uA
Maximum ignition frequency	2,000Hz (combined)
Energy limit	1,400Hz (combined)
Coil primary voltage	400/500V
Spark energy	160/250mJ
Trigger:	
Current	10mA
Edge	Adjustable
Voltage rsisng	>= 3.2V
Voltage falling	<= 1.6V
Tacho output:	
Voltage	Supply - 1.2V
Output current	100mA
Shape	Square wave
Operating temperature	<= 105°C
Dimensions	122L * 110W * 40H
Weight	800gm (Per box)

Title	PRO-DRAG6 250mJ V2	
Size: A4	Number: (C) M&W Ignitions	Revision: 13.04.25.1
Date: 13-Apr-2025		Sheet 1 of 1
File: D:\M&W\..\Pro-Drag6 250 S3 1.sch		Drawn By: WAG

M&W IGNITIONS

Performance & Quality

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

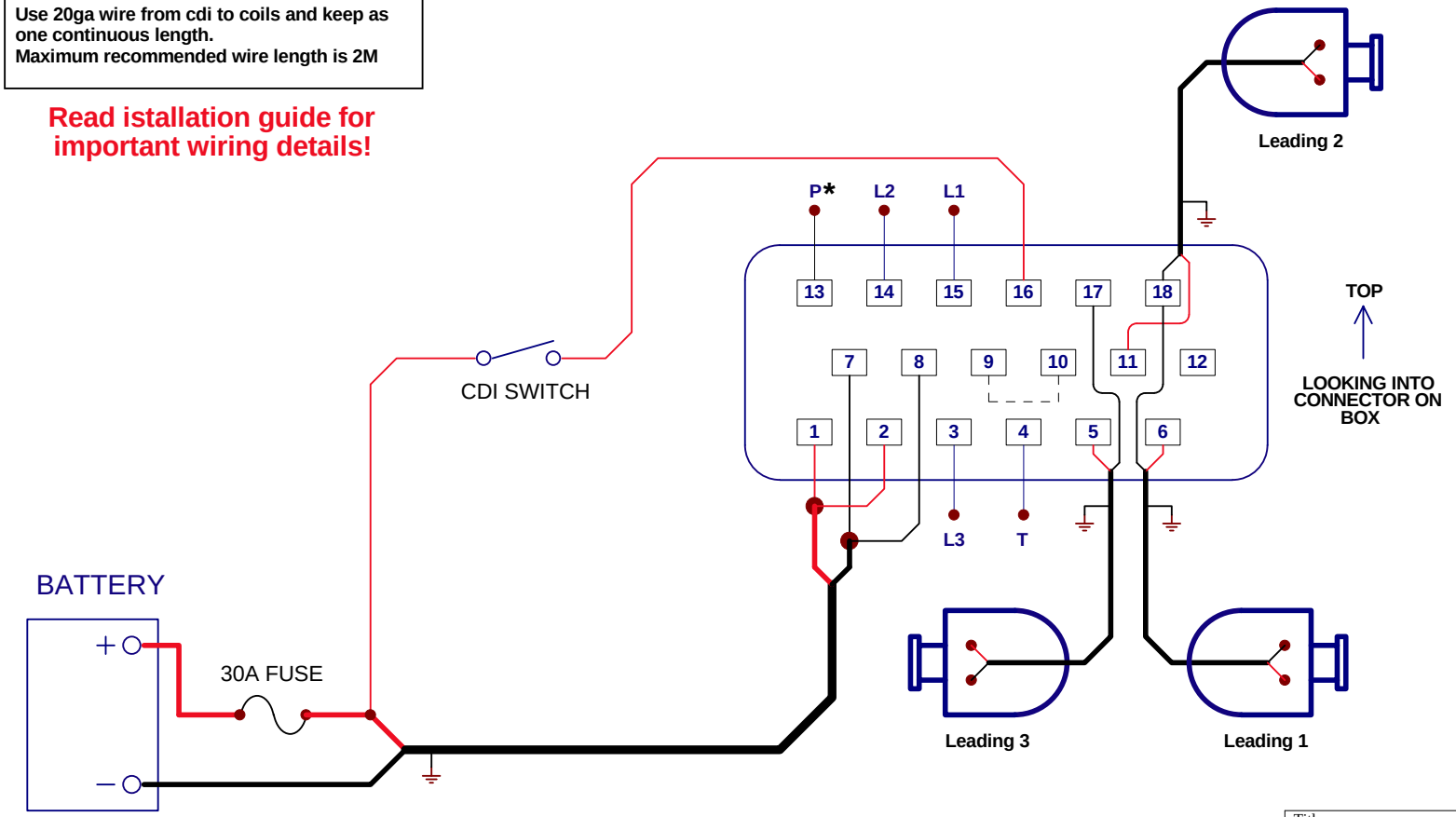
IGNITION COILS:

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

Read istallation guide for important wiring details!

CAUTION! HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT



Reverse polarity connection without fuse installed will damage unit!

Title	MAZDA ROTARY - LEADING V2		
Size: A4	Number: (C) M&W Ignitions		Revision: 13.04.25.1
Date: 13-Apr-2025		Sheet 1 of 1	
File: D:\M&W\..\Pro-Drag6 250 S3 2A V2.sch		Drawn By: WAG	

M&W IGNITIONS

Performance & Quality

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

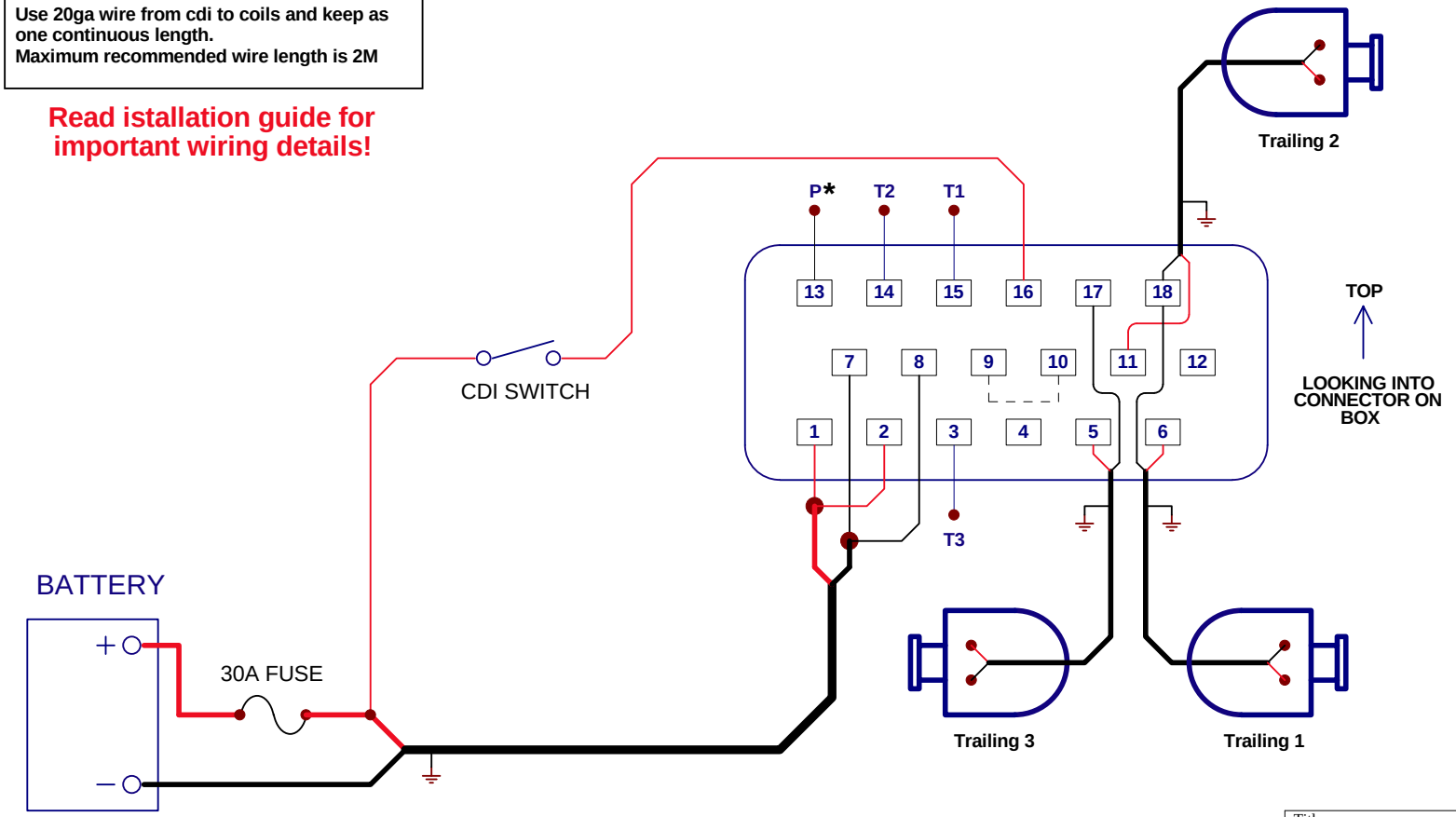
IGNITION COILS:

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

Read istallation guide for important wiring details!

CAUTION! HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT



Reverse polarity connection without fuse installed will damage unit!

Title	MAZDA ROTARY - TRAILING V2		
Size: A4	Number: (C) M&W Ignitions		Revision: 13.04.25.1
Date: 13-Apr-2025		Sheet 1 of 1	
File: D:\M&W\..\Pro-Drag6 250 S3 2B V2.sch		Drawn By: WAG	

M&W IGNITIONS

Performance & Quality

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

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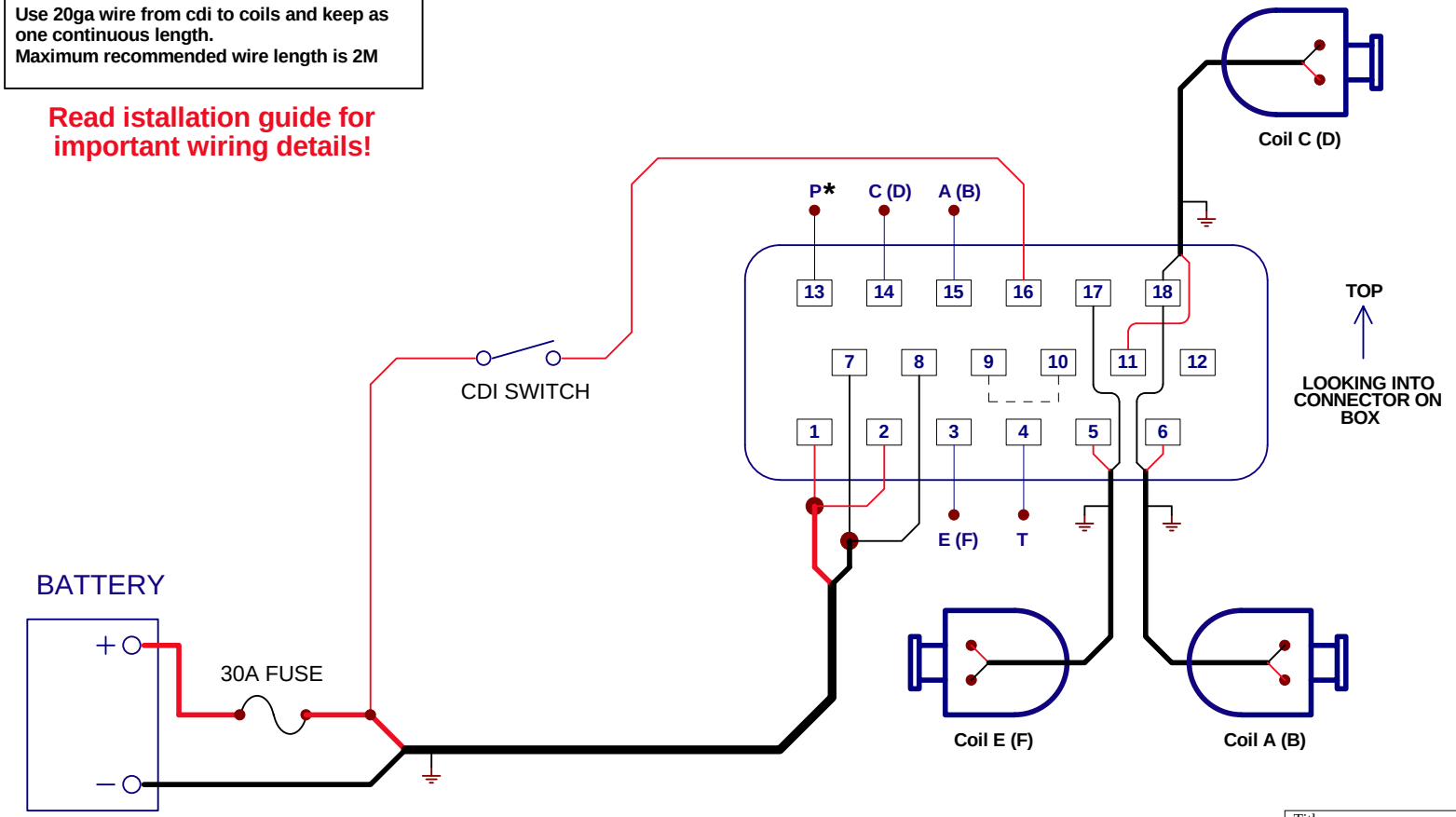
CAUTION! HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

*** FIRING ORDER MUST ALTERNATE BETWEEN BOXES ***



Reverse polarity connection without fuse installed will damage unit!

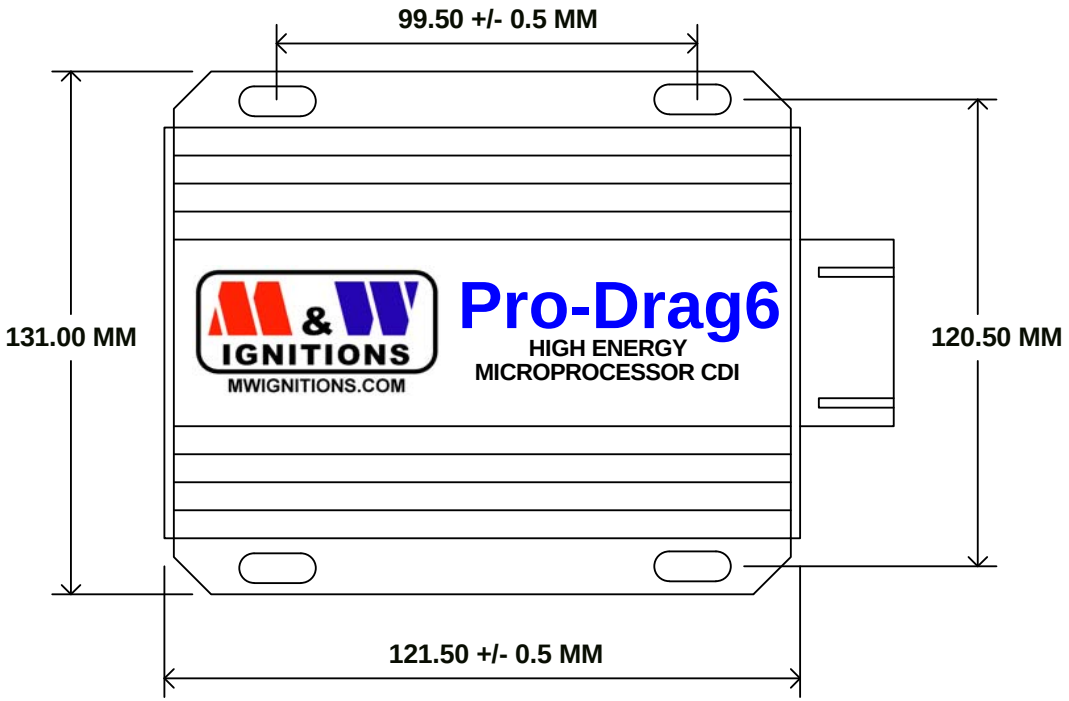
Title	SEQUENTIAL 6 CYLINDER V2		
Size: A4	Number: (C) M&W Ignitions		Revision: 13.04.25.1
Date: 13-Apr-2025		Sheet 1 of 1	
File: D:\M&W\..\Pro-Drag6 250 S3 V2 3.sch		Drawn By: WAG	

M&W IGNITIONS

Performance & Quality

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT



Slot dimensions - 5mm * 10mm

Title: **MOUNTING DIMENSIONS**		
Size: A4	Number: **(C) M&W Ignitions**	Revision: **13.04.25.1**
Date: 13-Apr-2025	Sheet 1 of 1	
File: D:\M&W\..\Pro-Drag6 250 S3 mounting dimensions V2.sldprt	Drawn By: MAG	