



PRO-16 S3

6 CHANNEL CAPACITOR DISCHARGE IGNITION

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

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CAUTION

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

38xxxx

**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

(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

COP COILS

COP (coil on plug) coils with built in drivers are not suitable for use with CDI ignitions. Small COP ignition coils may overheat when used in direct fire cdi applications. Inductive COP coils must be wired reverse polarity.

COIL SELECTION

Most inductive ignition coils will work with CDI systems. For best performance they should have very low primary resistance and inductance and a turns ration between 75 and 100 to 1.

For ultimate CDI ignition power use a CDI specific ignition coil such as our CDI COP pencil coils or Ferrite CDI coils.

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 either the Crane[®] PS92 or MSD[®] HVC2 coils.

COIL POLARITY

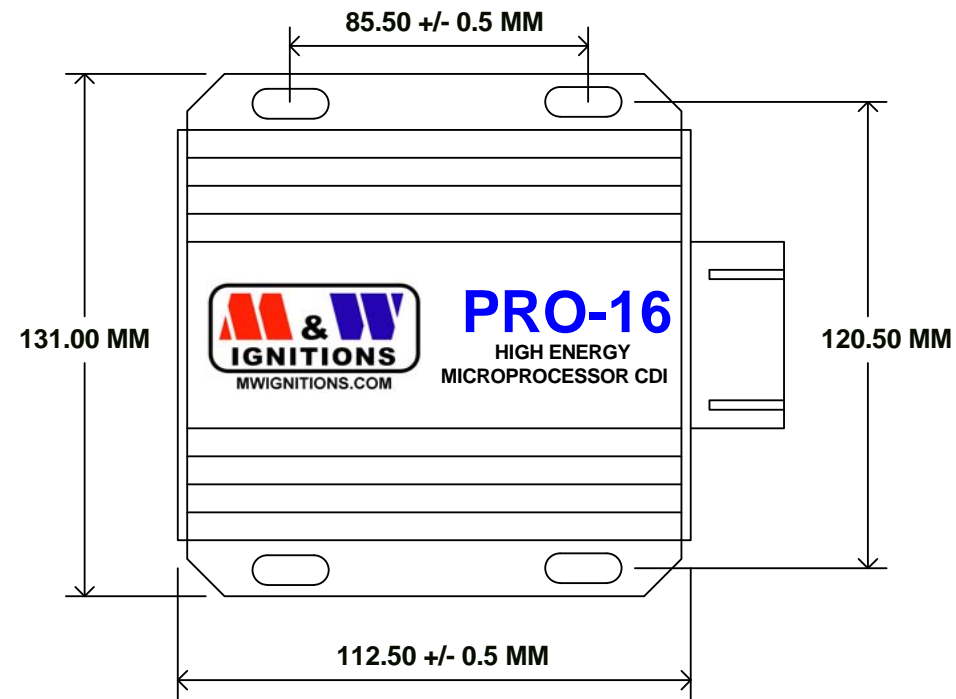
For correct operation inductive ignition coils should be wired with their primary polarity reversed.

CAUTION!

DAMAGE TO IGNITION COILS MAY OCCUR IF OPERATED WITH AN EXCESSIVE SPARK GAP.



DISCONNECT POWER BEFORE WORKING ON UNIT



Slot dimensions - 5mm * 10mm

Title		MOUNTING DIMENSIONS	
Size	Number	Revision	
A4	PRO-16 S3	1.2	
Date:	5-Aug-2009	Sheet 1 of	1
File:	E:\M&W\Pro16_S3_Mounting dimensions	Drawn By:	M&W

**CAUTION!
HIGH VOLTAGE**



**DISCONNECT POWER BEFORE
WORKING ON UNIT**

M & W IGNITIONS

Performance & Quality since 1996

VIEWED FROM BACK OF CONNECTOR



KEEP ALL INPUTS WELL SEPARATED FROM COIL OUTPUTS

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 C & D -
6 Coils A & B +	12	18 Coils A/C & B/D -

POWER SWITCH SELECTION

Do not use high power settings unless required. Unnecessary use of this function will cause excessive spark plug erosion and unduly stress other ignition components.

For best operation we recommend that Pin 13 on both boxes be connected in parallel to an output from the ECU which can be mapped to ground this pin when the engine boost exceeds 10-15 psi or as required.

Alternatively connect Pin 13 on both boxes in parallel to one side of a normally open 'Hobbs' style manifold pressure switch. Connect the other side of the switch to ground and adjust for operation around 10-15 psig.

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 = +6.5V to +15V
 Maximum supply current = 6.0A (per unit)
 Power off current < 700uA
 Maximum ignition frequency = 1200/800 Hz (combined)
 Coil primary voltage = 460V/540V
 Spark energy = 105/150 millijoules
 Trigger = 10mA adjustable edge
 Tacho = 12V, 25mA square wave
 Maximum allowable case temperature = 105°C
 Dimensions = 112L * 110W * 40H
 Weight = 570gm (each)

Title			
SPECIFICATIONS & DETAILS			
Size A4	Number PRO-16 S3	Revision 1.2	
Date:	5-Aug-2009	Sheet 1 of	1
File:	E:\M&W\...\Pro16_S3_1.sch	Drawn By:	M&W

M & W IGNITIONS

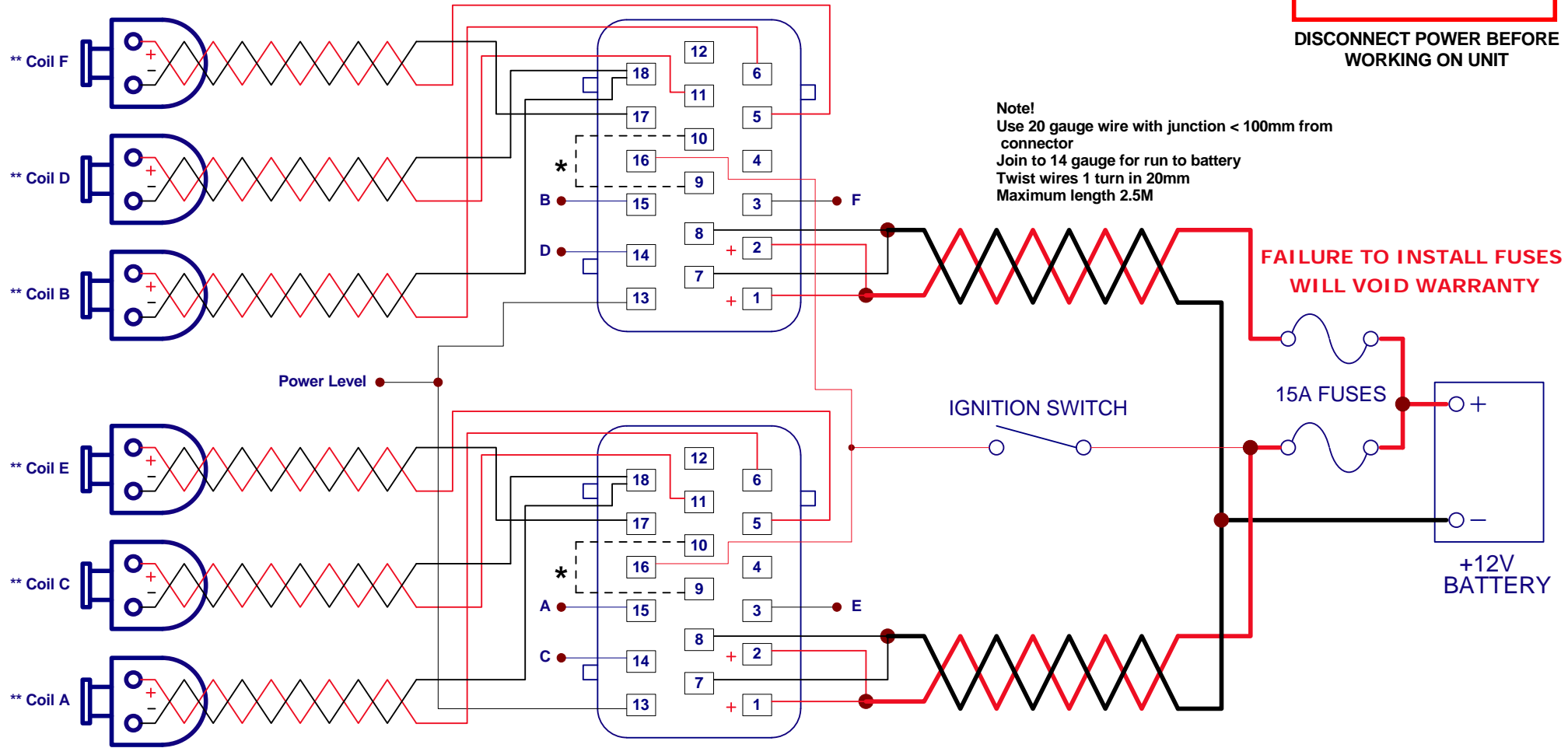
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CAUTION!
HIGH VOLTAGE



DISCONNECT POWER BEFORE WORKING ON UNIT

- * See page 1 instructions for trigger edge selection link
- ** Firing sequence not cylinder number



Title			6 CHANNEL SEQUENTIAL IGNITION		
Size	Number	Revision			
A4	PRO-16 S3	1.3			
Date:	5-Aug-2009	Sheet 1 of	1		
File:	E:\M&W\...\Pro16_S3_2.sch	Drawn By:	M&W		

M & W IGNITIONS

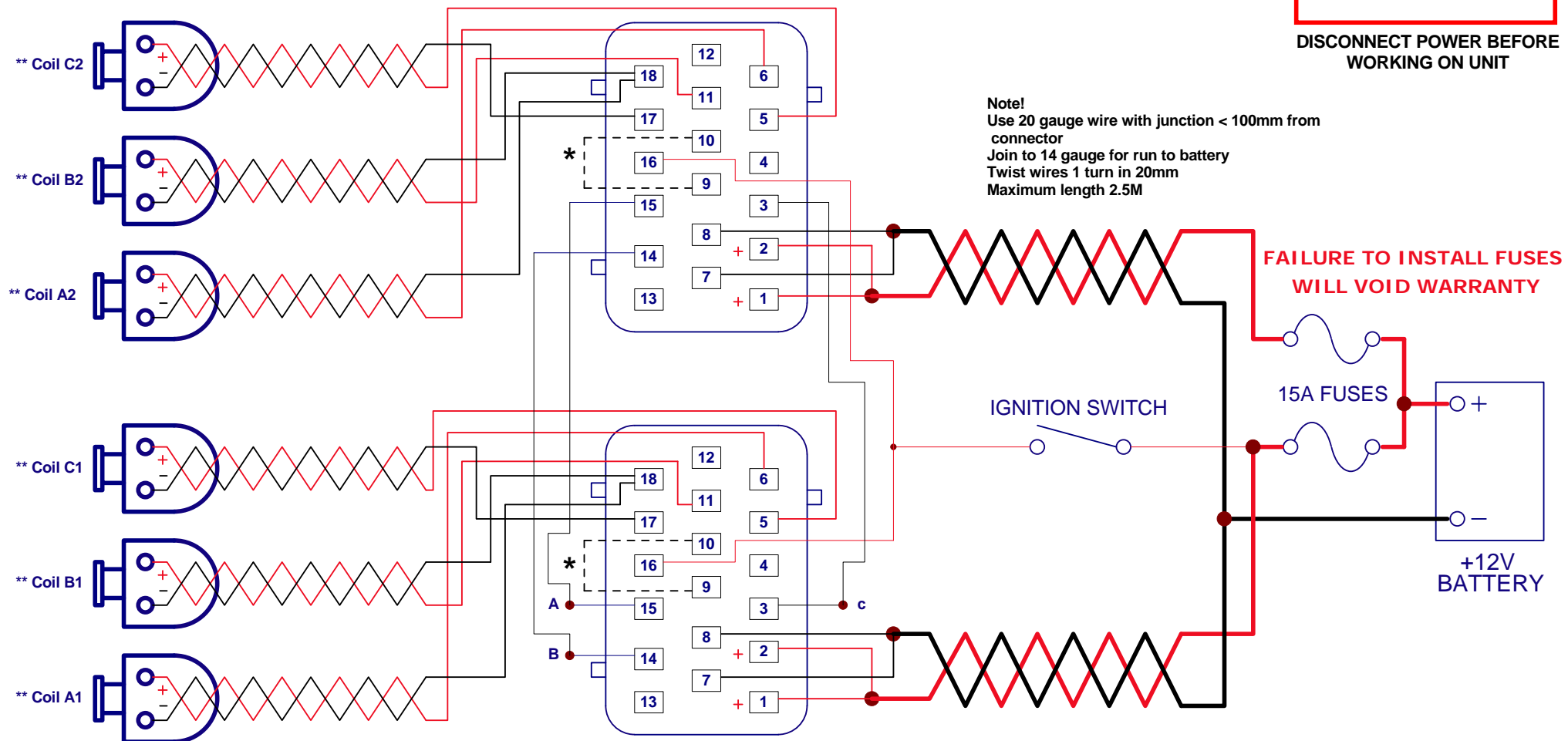
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CAUTION!
HIGH VOLTAGE



DISCONNECT POWER BEFORE WORKING ON UNIT

- * See page 1 instructions for trigger edge selection link
- ** Firing sequence not cylinder number



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

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Title			6 CHANNEL WASTED SPARK IGNITION		
Size	Number	Revision			
A4	PRO-16 S3	1.3			
Date:	5-Aug-2009	Sheet 1 of	1		
File:	E:\M&W\...\Pro16_S3_3.sch	Drawn By:	M&W		

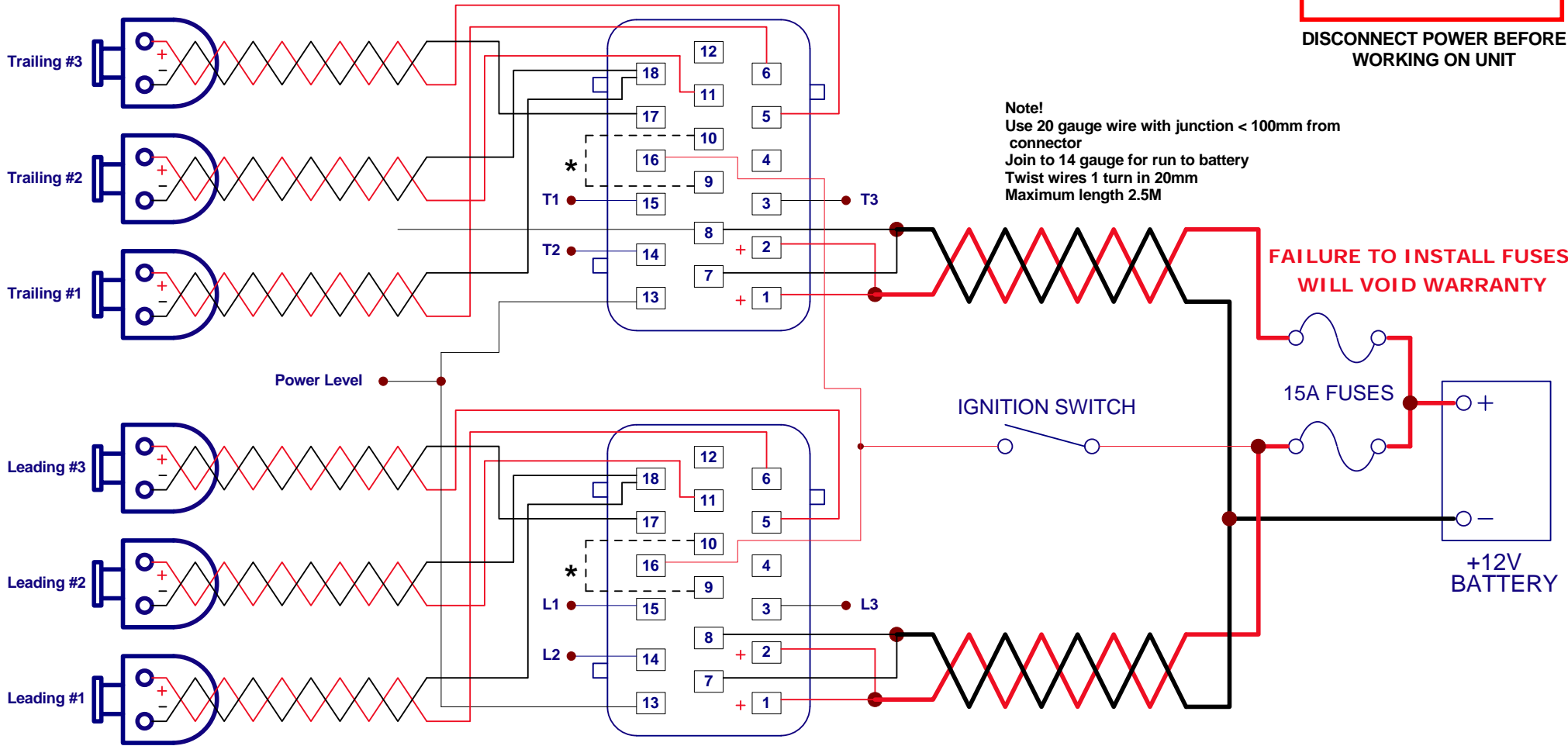
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CAUTION!
HIGH VOLTAGE

* See page 1 instructions for trigger edge selection link

DISCONNECT POWER BEFORE
WORKING ON UNIT



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

FAILURE TO INSTALL FUSES
WILL VOID WARRANTY

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

← TOP

Title			MAZDA TRIPLE ROTOR IGNITION		
Size	Number	Revision			
A4	PRO-16 S3	1.3			
Date:	5-Aug-2009	Sheet 1 of	1		
File:	E:\M&W\...\Pro16_S3_4.sch	Drawn By:	M&W		

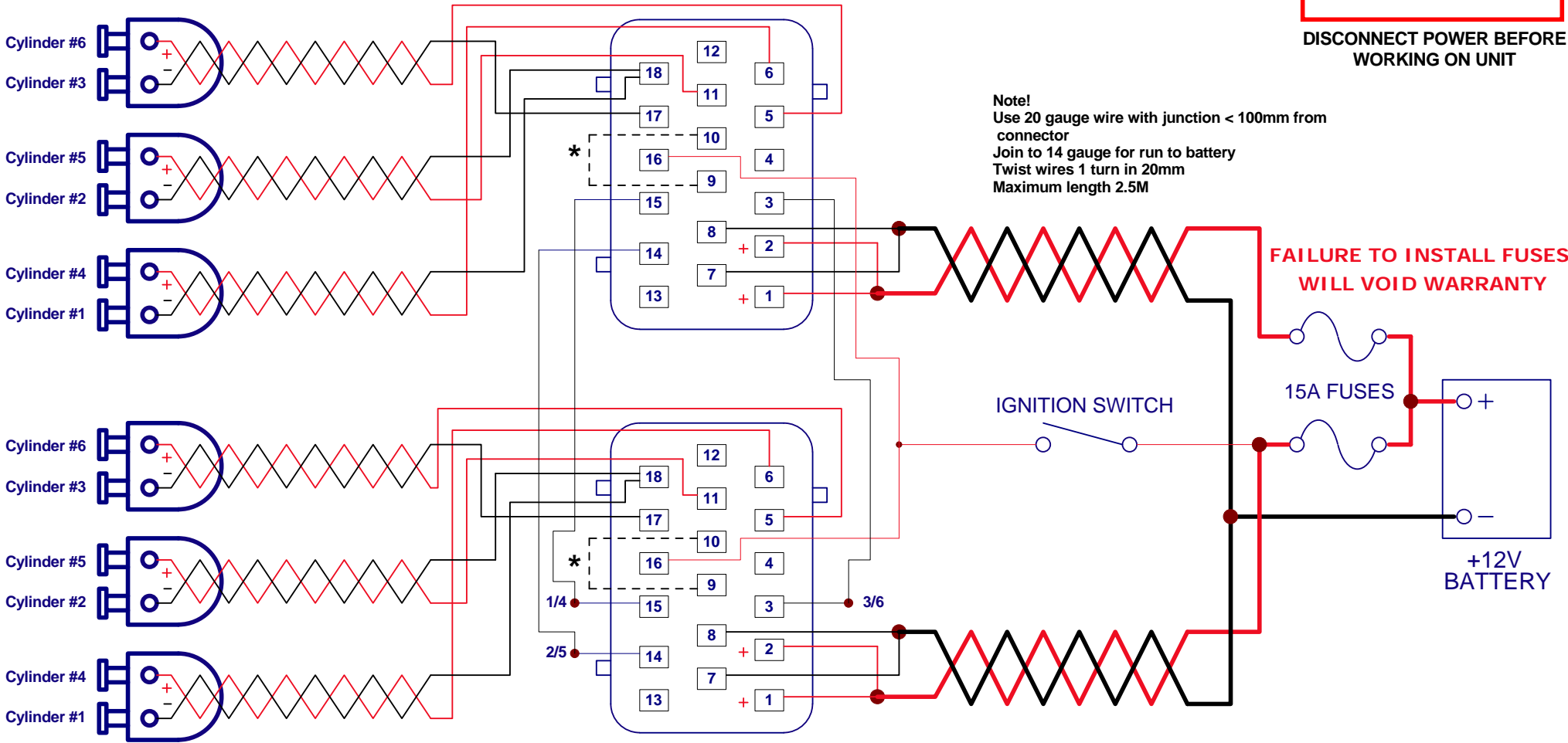
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CAUTION!
HIGH VOLTAGE

* See page 1 instructions for trigger edge selection link

DISCONNECT POWER BEFORE
WORKING ON UNIT



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

← TOP

Title			PORSCHE TWIN PLUG OPTION 1		
Size	Number			Revision	
A4	PRO-16 S3			1.3	
Date:	5-Aug-2009	Sheet 1 of	1		
File:	E:\M&W\...\Pro16_S3_5.sch	Drawn By:	M&W		

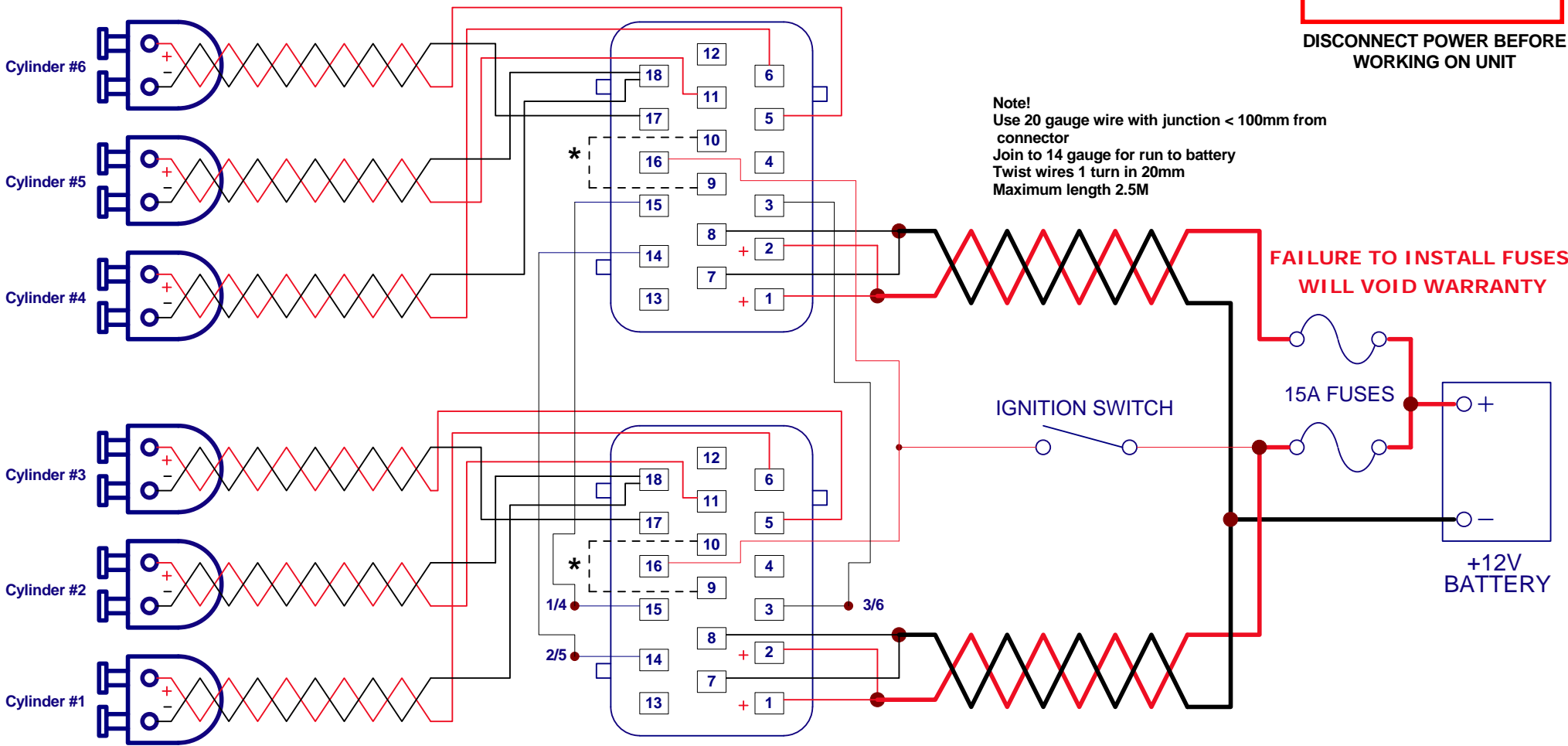
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CAUTION!
HIGH VOLTAGE

* See page 1 instructions for trigger edge selection link

DISCONNECT POWER BEFORE
WORKING ON UNIT



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

FAILURE TO INSTALL FUSES
WILL VOID WARRANTY

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

NOTE!. Option 2 will cause higher ignition voltage than Option 1!

Title			PORSCHE TWIN PLUG OPTION 2	
Size	Number	PRO-16 S3		Revision
A4				1.0
Date:	5-Aug-2009	Sheet 1 of	1	
File:	E:\M&W\...\Pro16_S3_6.sch	Drawn By:	M&W	

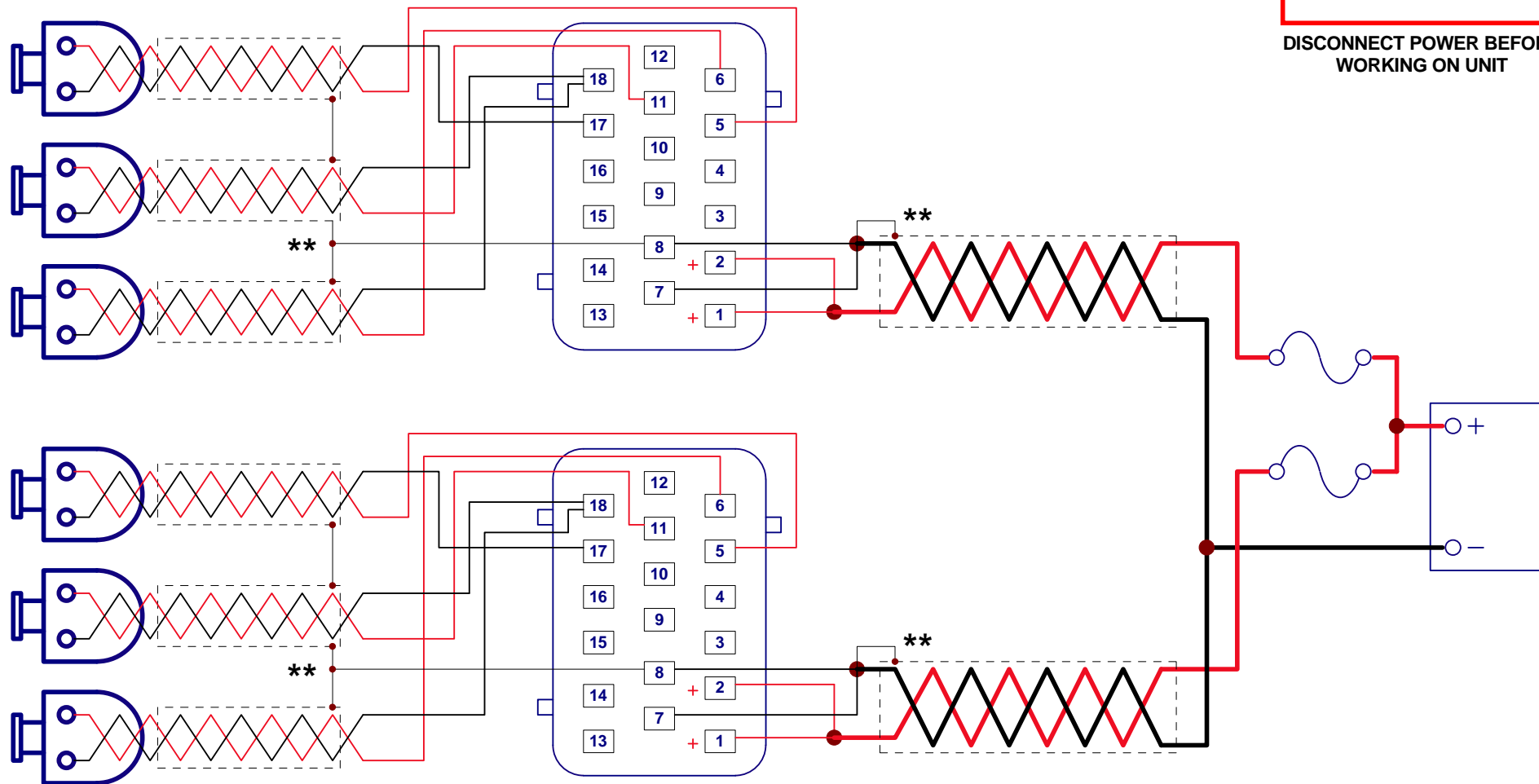
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Performance & Quality since 1996

CAUTION!
HIGH VOLTAGE



**DISCONNECT POWER BEFORE
WORKING ON UNIT**



**** Shielded cables required for Australian EMC compliance**

Title			AUSTRALIAN EMC COMPLIANCE		
Size	Number	Revision			
A4	PRO-16 S3	1.0			
Date:	5-Aug-2009	Sheet 1 of	1		
File:	E:\M&W\Diagrams\Pro-16 S3\EMC.sch	Drawn By:	M&W		