INSTALLATION INSTRUCTIONS

MSD 44 Amp Pro Mag Generator
Clockwise Rotation - PN 8130, PN 81303, PN 81305
Counterclockwise Rotation – PN 8140, PN 81403, PN 81405

Parts Included In This Kit:
1 – 44 Amp Pro Mag Generator
1 – Timing Tape, PN 8126

MSD Pro Mag Information

Congratulations on selecting the MSD Pro Mag – the most powerful and reliable magneto available! The following information will answer some of the questions you may come across concerning the Pro Mag. If you need more assistance, please contact our Customer Support Department at (915) 855-7123 or drop an email to **msdforms@msdperformance.com**.

INITIAL TIMING SETUP

A traditional "Buzz Box" cannot be used to set the timing of a Pro Mag because there are no mechanical points. The Pro Mag incorporates a high output magnetic pickup that ensures accurate timing and never requires adjustment. Follow these steps to set timing:

1. Position the crankshaft to your desired timing.
2. Position the generator in the engine with the rotor tip leading into the #1 terminal of the cap (Figure 1).
3. Start the engine and verify the timing with a quality timing light such as MSD's PN 8992 or PN 8991. and adjust timing as needed.

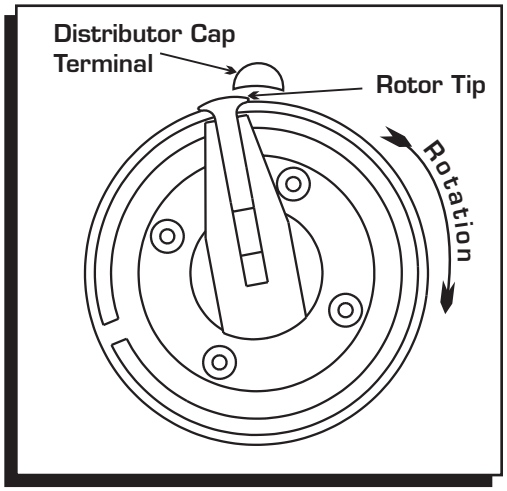


Figure 1 Rotor Tip and Cap Alignment.

CONVENTIONAL TIMING VS. THE PRO MAG

When converting from a "conventional" (non-MSD) magneto to a Pro Mag, it may be necessary to review your tune up. It is common for the ignition timing to accept a few degrees of retard or an increase in fuel to prevent lean mixtures. Taking the time to test and tune with small incremental changes will prove very beneficial.

CAP AND ROTOR MAINTENANCE

Due to the spark energy that MSD Pro Mags produce it is recommended to inspect the cap, rotor and spark plug wires at closer intervals. The components that are supplied with the Pro Mags are designed for strength and reliability but still require maintenance. Visually inspect for excessive wear or carbon tracking. Cap and Rotors are available as a kit from your MSD Dealer:

Generator	Cap and Rotor Kit	
Standard Chevy Generator, Pro Mag 12LT (4" cap)	PN 7919 (Red)	PN 79193 (Black)
Band Clamp Generators (4" cap) (12, 20 and 44 Amp Versions)	PN 8119	

Pro-Cap: 5" Cap - PN 7408 (red) or PN 74083 (black), Rotor - PN 7423, Base - PN 7456 (red) or PN 74563 (black) and Rotor Terminal - PN 7411.

CAP-A-DAPTS

When space permits, upgrading to a larger diameter magneto cap can add extra protection against spark scatter and crossfire. MSD offers a Cap-A-Dapt for each style Pro Mag. Each kit is supplied with everything required to install the new, large cap and rotor assembly.

Pro-Cap, PN 7455 (5" cap)

The largest cap and rotor available plus the entire assembly is molded from strong Rynite material. Designed for MSD generators with a four inch diameter (Figure 2).



Figure 2 Pro-Cap for Pro Mags, PN 7455.

SPARK PLUG WIRES

MSD only recommends using our 8.5mm Super Conductor spark plug wire. This wire features a copper-alloy conductor with a low resistance of 40 - 50 ohms per foot. The core and winding of the conductor produce a highly effective Electro Magnetic Interference (EMI) choke so it also has extremely high EMI suppression capabilities.

Your spark plug wires should be inspected for cuts, abrasions, resistance and continuity. It should be noted that spark plug wire is a maintenance item of the ignition system and should be replaced at least three times per season. Note that the coil wire should be replaced more frequently than the entire wire set due to handling eight times the energy.

To ensure a quality crimp when building spark plug wire sets, use the MSD Pro Crimp Tool, PN 35051. This Crimp Tool is supplied with the correct crimp dies for the 8.5mm Wire with MSD Dual Crimp Terminals. The dies are also replaceable, PN 3508.

CROSS DRIVES

Band Clamp style Pro Mag generators are equipped with cross drives due to their strength but existing two and four pin drives will interchange. If the drive is replaced it is recommended to replace the lock nut. Also use Blue Loctite and torque to 20 lbs-ft. Check out TechTips at www.msdpromag.com for more information.

CRANKING RPM

MSD Pro Mags require a minimum generator speed of 200-250 RPM to start (at the crank). If a block mounted starter is used a 16 volt battery will be required to produce reliable starting rpm. Blower Pulley starters may require 48 volts on Alcohol applications due to pulley drive ratios. On these applications, a jumber wire should be connected across the coil terminals. Once the engine reaches the required RPM this jumper should be pulled quickly from the terminals. MSD offers High Speed Block mounted starters for various applications.

DynaForce High Speed Starters:
Ford 289, 302, 351W **- PN 50902**
Ford BB 351M, 400, 429 - **PN 50922**
Chevy 10 Pitch/139 Tooth - **PN 50953**
Chevy 153/168 Tooth, Pro Mag **- PN 50952**
(Pefect for applications with magnetos that require 250+ rpm to start.)
Chevy 318 - 440 - **PN 50982**

KILL SWITCHES

12 and 20 Amp Pro Mags

Kill switches are supplied with the Electronic Points boxes for the 12 and 20 Amp Pro Mags. Each Point Box requires a Kill Switch. Never use one kill switch for two Points boxes. This MSD Switch, PN 8111, is the only Kill Switch recommended for use with the Pro Mag.

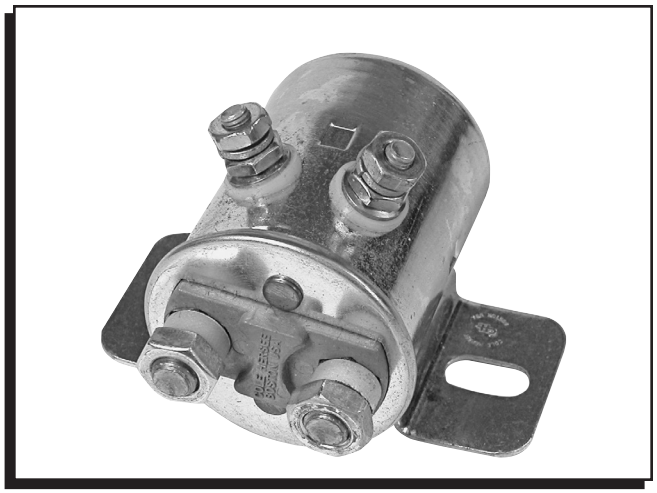


Figure 3 44 Amp Kill Switch, PN 8134

MSD 44 Amp Pro Mags

MSD 44 Amp Pro Mags cannot be used with a common mechanical On/Off switch. A Kill Switch is available through MSD, PN 8134. Jumper wires across the coil terminals are required when starting the engine (Figure 3).

WARNING: Extremely high current and voltage is present on the Pro Mag Coil terminals and on the Kill Switch Relay. Use extreme caution when working around the Coil and Relay.

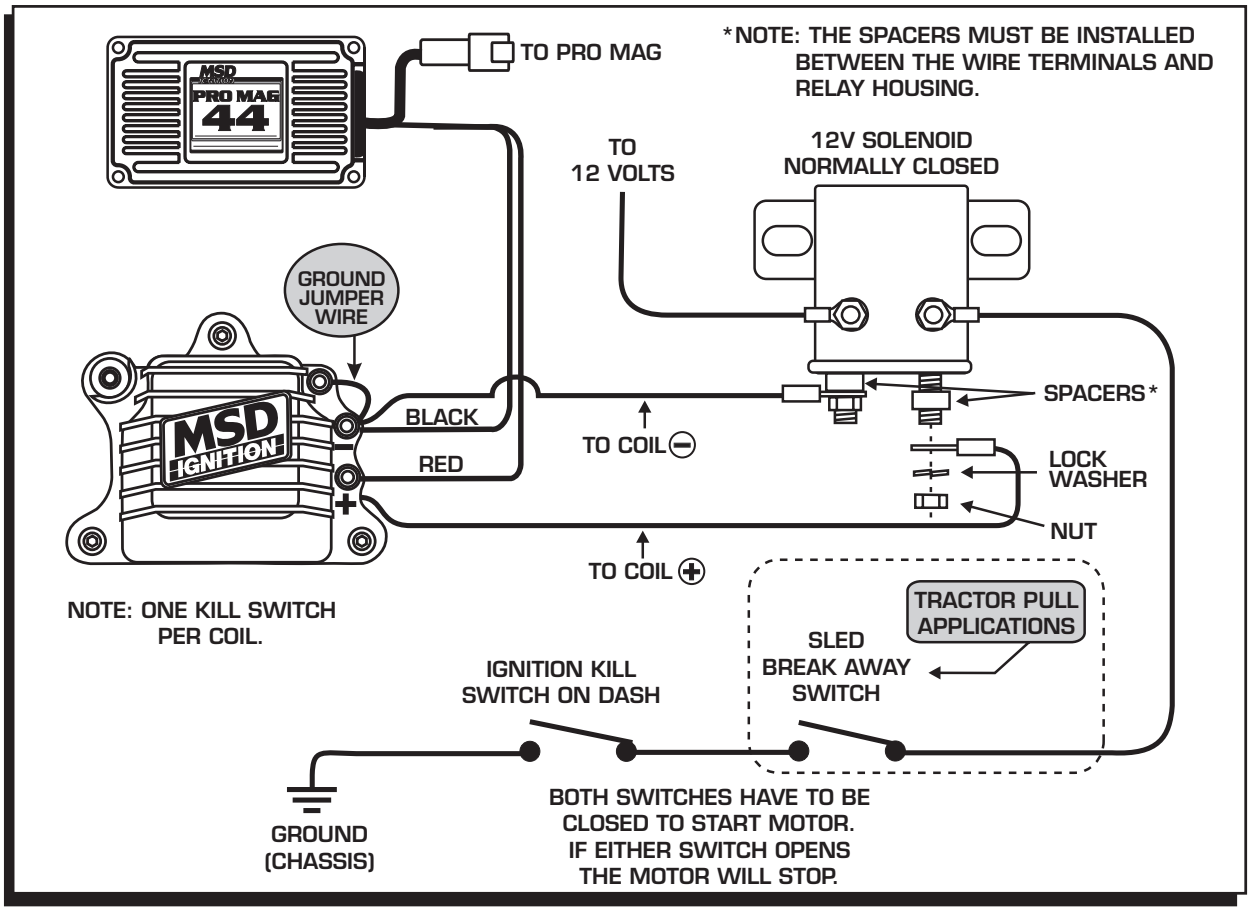


Figure 4 Typical Wiring on a Tractor Puller.

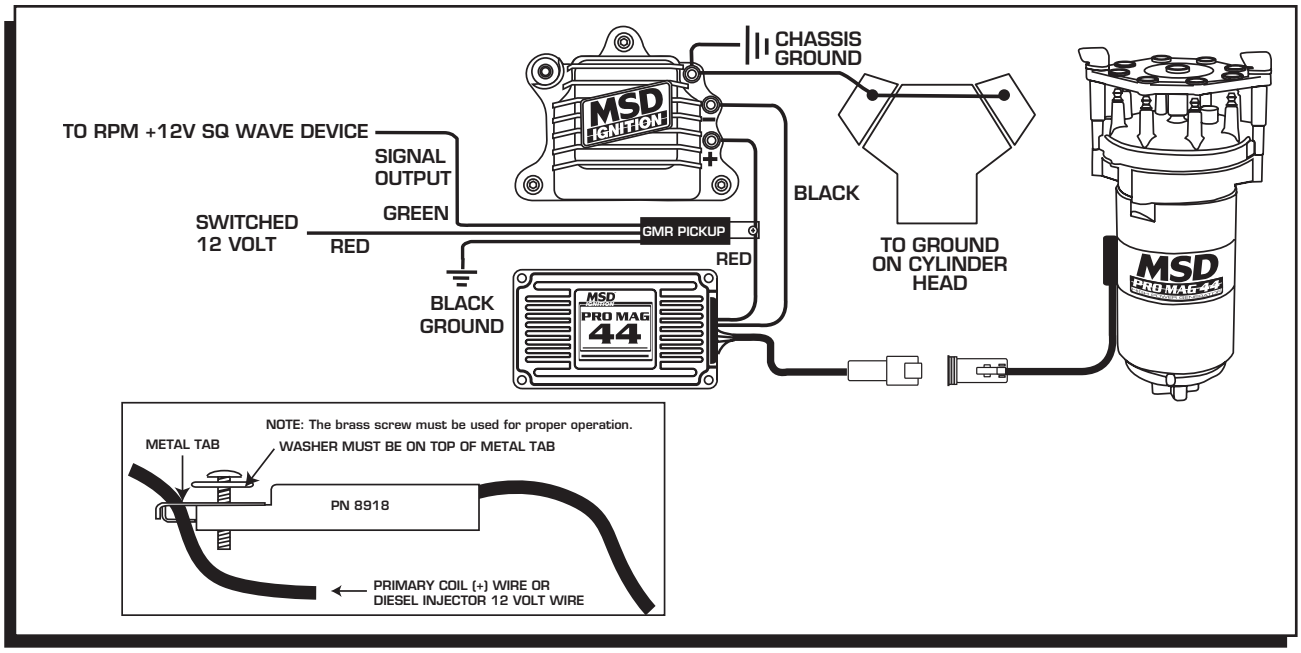
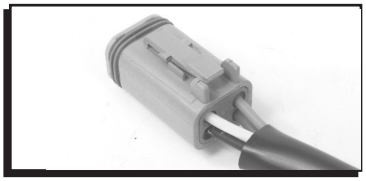


Figure 5 GMR to PN 8963 Shift Light on Pro Mag 44 Electronic Points Box.

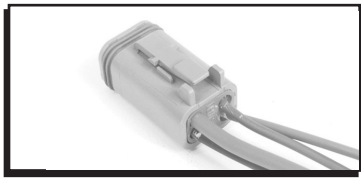
WIRING AND CONNECTORS

MSD uses Deutsch connectors with the Pro Mag. These connectors should be inspected due to frequent disconnecting. Lightly pulling on the wires near the connector will make certain they have not worked loose. The connectors can be disassembled as follows:

1. Remove the orange wedge lock with a small flat blade screwdriver.
2. Pry the spring lock back to unlock the wire, and pull it through.
3. Inspect the wire crimps and reassemble.



12 and 20 Amp Mag Connector.



44 Amp Mag Connector.

Note that the connectors have numbered terminals. Match the color wire with the position as follows:

12 and 20 Amp			
#1 Violet	#2 Green	#3 Black	#4 Yellow

44 Amp			
#1 Violet	#2 Green	#3 Black	#4 Red

For more information on connectors, check out Tech Tips at www.msdpromag.com.

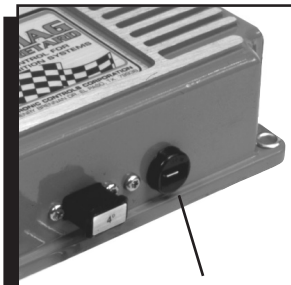
MSD offers a special kit consisting of connectors used with the ProMag 44. The kit PN 8124 is designed for field repairs.

GENERATOR SUPPORT

In some applications it is recommended that a generator support bracket be fabricated. Due to the variety of mounting applications, MSD does not offer a single mag bracket. For applications using two Pro Mags it is recommended to use the Dual Mag Stabilizer Bracket, PN 301821-0004 from RCD Engineering, wwwRCDengineering.com.

TACHOMETERS AND DATA ACQUISITION EQUIPMENT

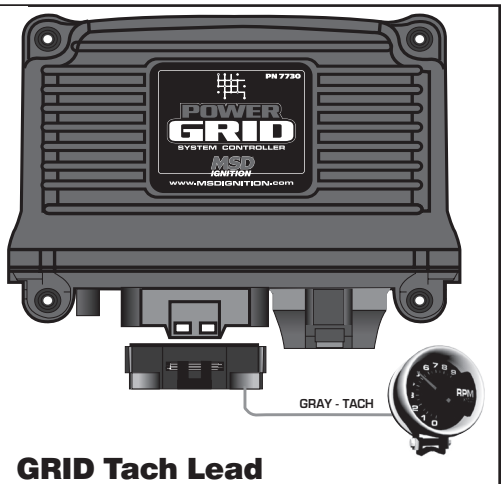
Tachometers and data acquisition systems require a certain type of trigger signal. Most of these systems require either a 12-volt square wave signal or a current style inductive pickup. MSD has components that can provide both signal types.



Tach Terminal
The MSD Timing Retard, PN 8168 has a Tach output terminal that provides a 12 volt square wave signal.



Tach Converter, PN 8132
This converts the Pro Mag's signal to a 12-volt square wave with a 20% duty cycle. It will work on all Pro Mag systems and requires a 12 volt battery source.



GRID Tach Lead

Figure 6 Wiring a Tachometer with the Tach Converter.

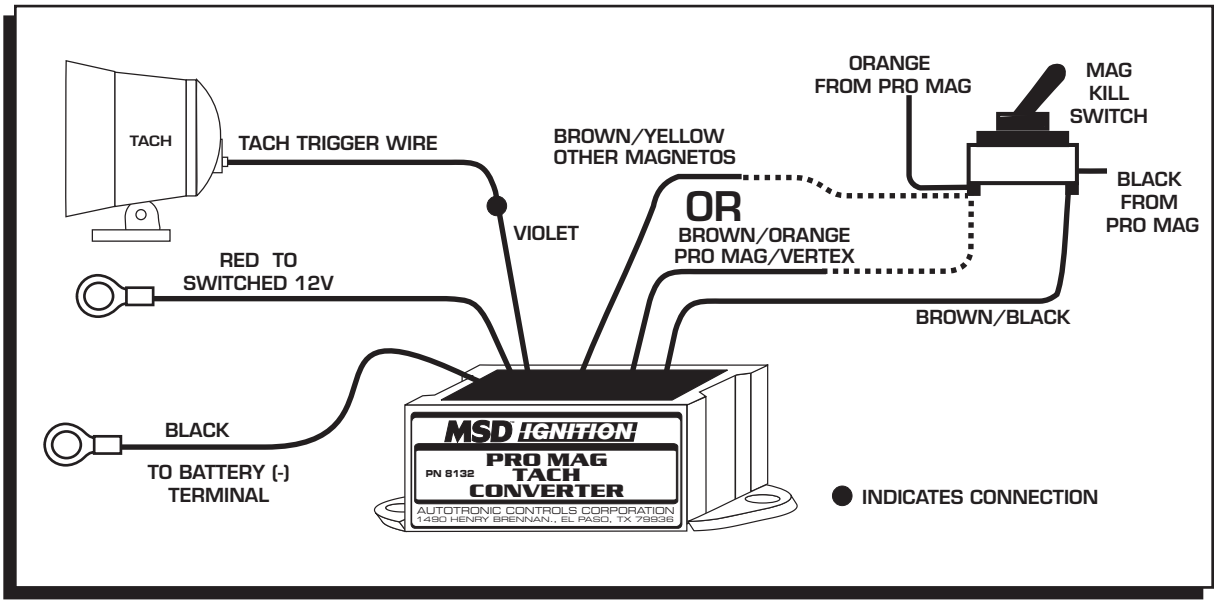


Figure 7 Wiring a Tachometer with the Tach Converter.

PRO MAG SERVICE

For repairs and component checks, you can send your Pro Mags to MSD. For information on maintenance or warranty work please contact the MSD Magneto Department at (915) 856-2785 (7 a.m. to 3:30 p.m.).

CRANK TRIGGERS

Crank triggers are available for all MSD Pro Mag systems. For more information call the factory for specific applications.

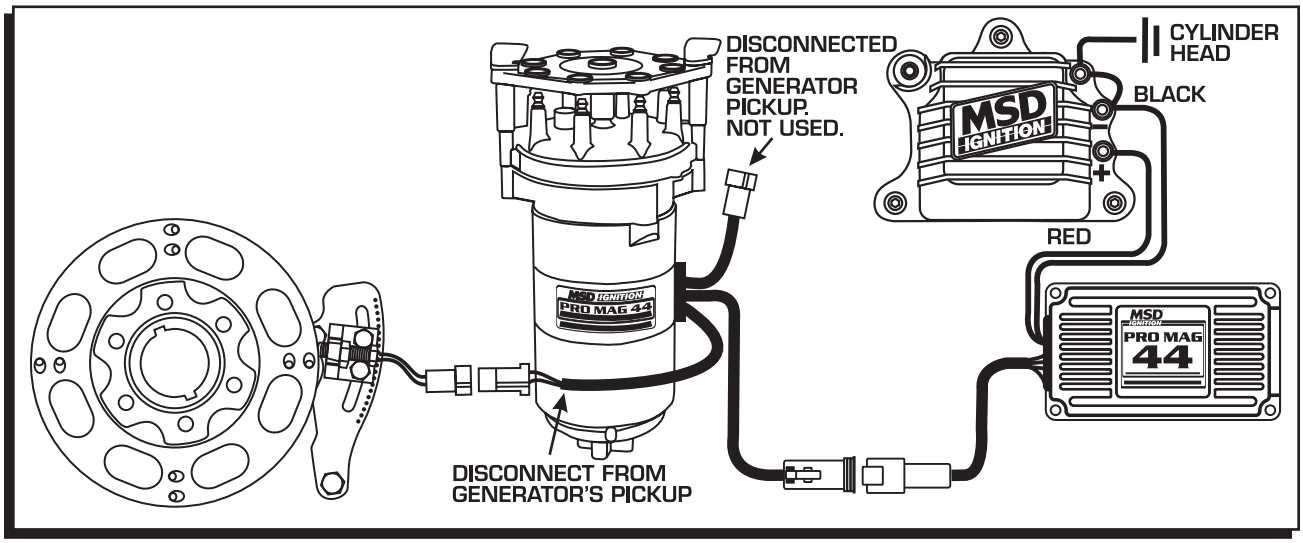


Figure 8 Crank Trigger Installation.

44 AMP GROUND PATH

Both heads must be grounded to a point on the chassis that is shared with the negative coil terminals. The Points Boxes should share ground with the PN 8168 Retard box (if used) which is also grounded to the battery and chassis.

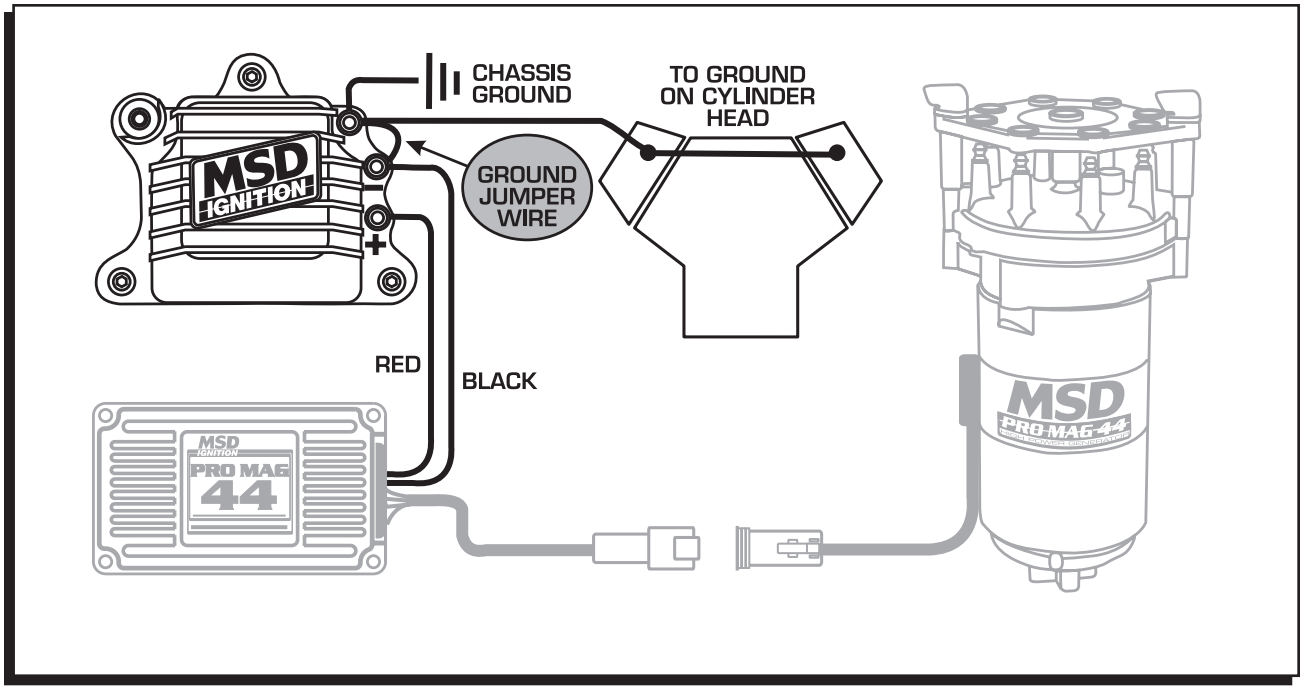


Figure 9 44 Amp Pro Mag Ground Path.

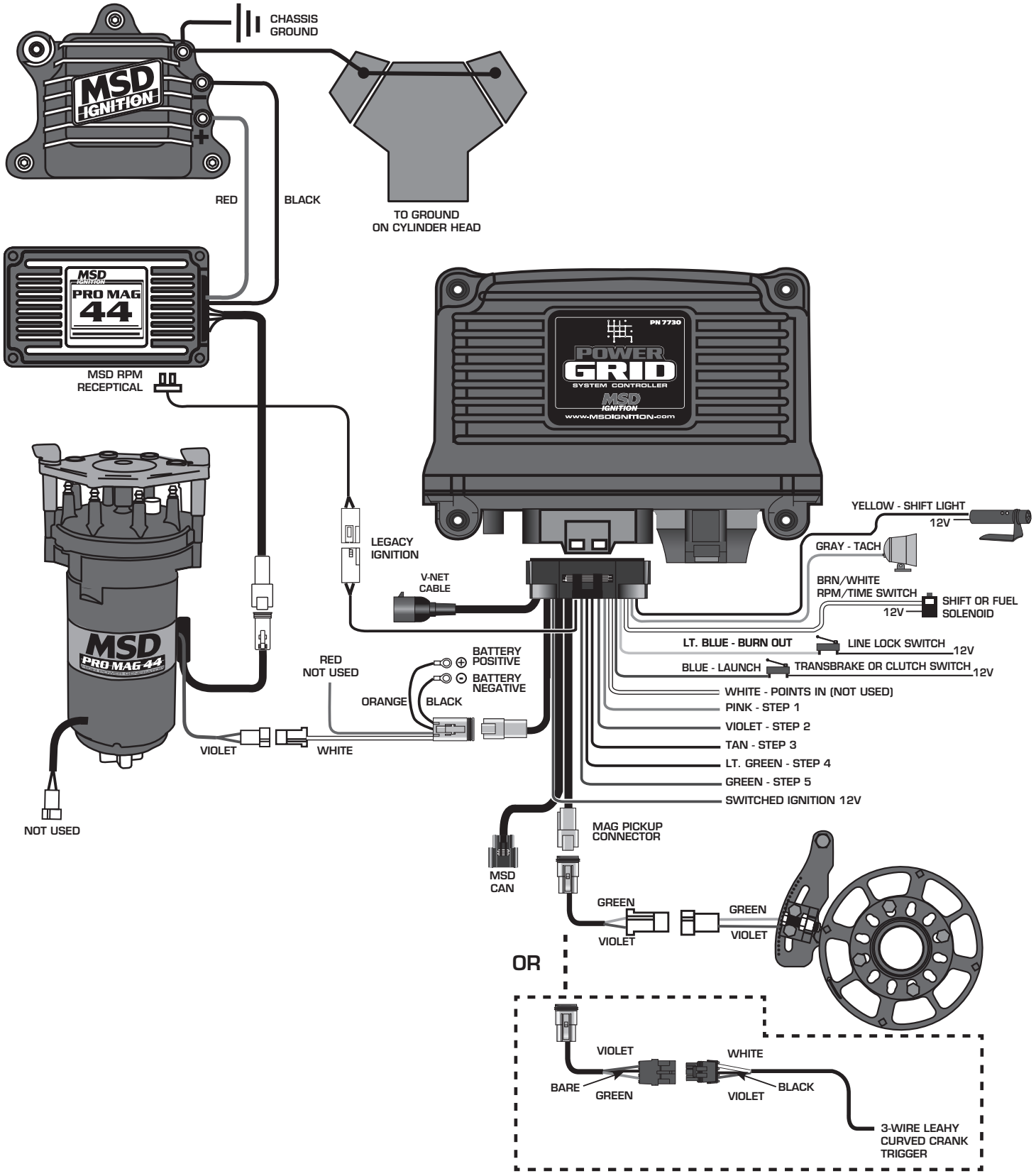

CHASSIS GROUND
MSD IGNITION
RED
BLACK
TO GROUND ON CYLINDER HEAD
MSD PRO MAG 44
MSD RPM RECEPTICAL
PN 7730
POWER GRID
SYSTEM CONTROLLER
MSD IGNITION
www.MSDIGNITION.com
LEGACY IGNITION
V-NET CABLE
YELLOW - SHIFT LIGHT
12V
GRAY - TACH
BRN/WHITE RPM/TIME SWITCH
12V
SHIFT OR FUEL SOLENOID
LT. BLUE - BURN OUT
LINE LOCK SWITCH
12V
BLUE - LAUNCH
TRANSBRAKE OR CLUTCH SWITCH
12V
WHITE - POINTS IN (NOT USED)
PINK - STEP 1
VIOLET - STEP 2
TAN - STEP 3
LT. GREEN - STEP 4
GREEN - STEP 5
SWITCHED IGNITION 12V
RED
NOT USED
BATTERY POSITIVE
BATTERY NEGATIVE
ORANGE
BLACK
VIOLET
WHITE
NOT USED
MAG PICKUP CONNECTOR
MSD CAN
GREEN
VIOLET
GREEN
VIOLET
OR
VIOLET
BARE
GREEN
WHITE
VIOLET
BLACK
3-WIRE LEAHY CURVED CRANK TRIGGER

Figure 11

MSD INSTALLATION INSTRUCTIONS

TECH NOTES

Service

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

All returns must have a Return Material Authorization (RMA) number issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) MSD-7859 or visit our website at www.msdperformance.com/rma to automatically obtain a number and shipping information.

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle. The repaired unit will be returned as soon as possible using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 5:00 p.m. Monday - Friday (mountain time).

Limited Warranty

MSD warrants this product to be free from defects in material and workmanship under its intended normal use*, when properly installed and purchased from an authorized MSD dealer, for a period of one year from the date of the original purchase. This warranty is void for any products purchased through auction websites. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD. Any item that is covered under this warranty will be returned free of charge using Ground shipping methods.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representation whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD or its suppliers be liable for special or consequential damages.

*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD. Any modifications to this item or if it is used on an application other than what MSD markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. MSD will accept no liability for custom applications.

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