

# **Alternator Conversion**

Installation Instructions

## For TR2-TR4A

PART # 130-058

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Scan the code to watch Moss's Generator to Alternator Conversion Video

Or search "Moss TV generator to alternator conversion" on YouTube.

Read and understand these instructions before attempting the installation.

Figures may vary from actual parts.

Notes: Your vehicle will need to be converted to negative ground if it is not already. See "Converting to Negative Ground" toward the back of these instructions before beginning the installation.

There are a few different pulleys, belts and narrow belt conversion kits out there for TR2-TR4A. These instructions are written around a TR3 with a stock 3/4" wide belt but can be used with our 3/8" belt conversion 837-508 and other pulleys.

The alternator in this kit has been modified to suit this installation. If you ever need a replacement the part number is 130-101.

#### **Tools required:**

- ½" combination wrench
- wire stripers
- flat screw driverwire cutters
- wi
- ½", 11/16" and 7/8" sockets

• soldering gun and solder

- wire crimpers6" socket extension
- locking pliers
- impact gun or a strap wrench
- workshop manual

ratchet

illustration purposes only. Disconnect the battery leads. Consult your work shop manual and remove of your generator from the vehicle. Also remove the generator adjusting link. Leave the generator mounting bracket and generator pedestal attached to the engine.

1) We removed the front apron and intake manifold for

- 2) Remove the pulley from the generator. This is easily done with an impact wrench and appropriate sized socket (ours was <sup>1</sup>/<sub>16</sub>"). However, if an impact wrench is not available you can use a strap wrench to hold the pulley while you loosen the nut with a normal ratchet and socket. If you do not have a strap wrench you can wrap and old belt around the pulley and hold the belt with locking pliers to break the nut free. This will ruin the belt so do not use the belt you intend to install on a vehicle.
- 3) Remove the nut, lock washer. Remove the tape, cardboard or plastic tube which is holding the key in place. Install the supplied alternator fan onto the alternator. Install the supplied alternator pulley spacer (shim) onto the alternator. Install the pulley you removed from the generator onto the alternator followed by the alternators lock washer and nut. Our car required the pulley spacer (shim) to move the pulley away from the alternator fan because the <sup>3</sup>/<sub>4</sub>" belt pulley will otherwise push the fan into the alternator housing. Other applications may not require the pulley spacer (shim). Torque the nut to 45 ft. lbs. Figure 3.

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4) The ¾" belt is difficult to install once the alternator is mounted so it is best to keep the belt routed around all the pulleys on the engine while you install the alternator. The ¾" narrow belt is easily installed even after the alternator is mounted. Do not use the thick flat washer until instructed. Put a flat washer on the longest <sup>5</sup>/<sub>6</sub>" bolt. Install the bolt through front side of the lower rear ear of the alternator. Note this ear has and adjustable sleeve in it. Put the alternator spacer on the bolt after it is protruding through the adjustable sleeve. Lower the alternator down in place and push the bolt through the rear ear of the generator mounting bracket. Install a flat washer, a lock washer and a nut finger tight.

Next install a lock washer and flat washer onto one of the  $\frac{5}{16}$ " fine thread bolts. Install the bolt through the front lower ear of the alternator and thread it into the generator pedestal finger tight. Figure 4.



5) Put a lock washer and a flat washer on the <sup>5</sup>/<sub>16</sub>" coarse thread bolt. Install the alternator mounting bracket onto the water pump housing ear using the coarse thread bolt.

Put a lock and flat washer on the remaining <sup>5</sup>/<sub>6</sub>" fine thread bolt and install the bolt through the top alternator ear and alternator mounting bracket. Put the thick flat washer on the protruding bolt so that it is up against the alternator mounting bracket followed by the remaining lock washer and nut.

- 6) At this point the alternator is mounted to the engine and all the hardware is only finger tight. Pull on the alternator to achieve proper belt tension. Do not over tighten the belt. These engines are sensitive to excessive loads on the crank shaft. Over tightening the belt could result in bearing failure. Tighten the upper alternator mounting hardware first to hold the belt tension. Then tighten the alternator mounting bracket to the water pump housing followed by the lower alternator mounting hardware. Now the belt and all the alternator mounting hardware should be tight.
- 7) To install the alternator plug kit 540-280 (supplied) on your car, locate the 2 wires that plugged into the back of your generator. Cut the terminals from the wires as close to the terminals as possible. Feed the thicker gauge wire positive lead (labeled "G" in 540-280 instructions) through either of the larger slots ("N") of the insulator ("R"). Feed the thinner gauge wire (Ind lead "F") through the smaller slot ("M"). Strip and solder the new terminals to the wires and complete assembly of the plug kit using the 540-280 instructions. Make sure to plug it into the back of the alternator.

Depending on vehicle year, the letters on the voltage regulator may differ. The key below explains the different control box terminals. Use the key and the diagrams in the following steps to rewire for the alternator. *Note: The order of terminals on the voltage regulators in the diagrams are not vehicle specific. Note the letters on your voltage regulator and label the wires as you disconnect them.* 

Terminal letter	Description for a stock generator equipped vehicle	Alternator conversion modification	
E	"E" represents Earth (or ground).	This wire can be grounded to the chassis or covered and tied off in the loom. It is no longer needed.	
F or WL	"F" represents Field.	"F" or "WL" should be connected to the "IND" (Indicator) spade on the alternator on one end.	
	"WL" represents Warning Light and is connected internally to "D".	The other end should be connected directly to the charge light indicator wire.	
D	"D" represents "Dynamo". On a vehicle with "D" & "WL" the terminals are connected internally. On vehicles with only a "D"; the warning light wire shares the external terminal with the dynamo wire.	The generator's "D" wire is now the alternator's "BAT" (Battery) wire and should be connected to all "A", "A1" or "B" wires. The self regulated alternator directly powers the battery, ignition switch, ammeter, fuse block, etc.	
A, A1 or B	Terminal "A" feeds the ammeter. Terminal "A1" feeds the ignition switch. "B" terminals feed the battery, ignition switch, fuse block, etc. with power.		





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8. The alternator is internally regulated and no longer needs the external "generator control box" (voltage regulator). Figure 8a below shows a stock negative (-) ground vehicle's wiring diagram with the generator still intact. Remove all the wires from the control box as shown in Figure 8b.





9. Plug the wires into your alternator as shown. Figure 9.



10. Complete the wiring on your vehicle using the following diagram. Make sure to insulate the connections. You may remove the regulator (generator control box), it is no longer needed. Figure 10.



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#### **Converting to Negative Ground**

- If you have an original radio, check for a positive (+), negative (-) switch on the back of it. Flip the switch if it is present. If the radio does not have the switch, you must remove the radio. It will no longer work with negative ground.
- 2) Reverse the wires connected to the ammeter.
- 3) Reverse the connections going to the ignition coil: Connect the (-) side of the coil to the wire going to the distributor and the (+) side of the coil to the wire going to the ignition switch.
- 4) Reverse the battery terminal leads so the negative (-) is connected to the chassis ground. The positive (+) lead should now feed the starter, ignition, fuses, alternator, ect.

That's it! It is not necessary to change the leads at the starter motor. The starter uses a series-wound motor that will always rotate in the correct direction with either polarity.

Contents of the kit #130-058				
Note - Specifications and components are subject to change and revision without notice.				
Item No.	Description	Quantity		
130-101	Alternator, 45AMP, Modified	1		
053-325	Alternator Bracket, Triumph	1		
540-280	Plug Kit, Alternator	1		
772-854	Spacer, TR2-4A Alt Conversion	1		
772-855	Spacer, Pulley	1		
052-252	Bolt, Hex, 5/16-18 X 1.0	1		
771-643	Bolt, Hex, 5/16-24 X 1.25	2		
320-225	Bolt, 5/16 UNF X 3 IN	1		
051-254	Spacer, Upper, Alternator	1		
051-588	Washer, Flat, 5/16 IN., SAE	5		
051-587	Washer, Lock, 5/16 IN	4		
772-856	Instructions, TR2-4A Alt Conv	1		
051-387	Spade Con, Female, 18-22 GA	2		
051-395	Spade Con, Male, 18-22 GA	2		
161-615	Conn, Female Spade, 16-14 GA	2		
161-620	Conn, Male Spade, 16-14 GA	2		

Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.

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