

## When and How to Polarize a Generator

Polarization is a procedure which matches the polarity for the generator and the voltage regulator by permitting a surge of current to flow through the generator, correctly polarizing it. ***Damage to electrical components can occur if polarities do not match.***

Ferguson tractors have utilized both positive and negative ground systems.

Delco 6V systems have positive ( + ) ground.

Delco 12 V systems have negative ( - ) ground.

Lucas systems for both 6V and 12V models have positive ( + ) ground.

Polarization of the generator should take place whenever any of the following events occur:

1. The battery is replaced or disconnected from the tractor
2. The generator is replaced or serviced
3. The regulator is replaced or serviced

If any of these events occurred, do not start the engine until polarization is done. ***The polarity of the generator must be set to match that of the voltage regulator.***

Make a jumper wire (14 or 16 gauge) long enough to reach from the battery to the generator. Put alligator clips on both ends.

To polarize a generator on a tractor having a Delco 6V positive ground system or a Lucas 6V or 12V positive ground system, attach one clip to the **A** terminal on the generator. With the other clip, briefly for only a split-second (or a spark occurs) tap the **negative** ( - ) terminal on the battery.

To polarize a generator on a tractor having a Delco 12V negative ground system, attach one clip to the **A** terminal on the generator. With the other clip, briefly for only a split-second (or a spark occurs) tap the **positive** ( + ) terminal on the battery.

Turn on the ignition switch. On models with the charge indicator light (TE/TEA/TO-20), the light should come on (indicating discharge) before the engine is started. Once the engine starts and the system is charging, the red light should go **off**, just like the idiot light on many cars and trucks.

If the engine is running slowly so the generator is not charging enough to overcome the load (ignition/lights) the red light should come back on or glow slightly. Also, because the cut out relay in the regulator will not close (and connect the generator to the battery to charge it) until the generator starts putting out enough power to charge the battery, the light may stay on or the ammeter will show discharge until the throttle is opened enough to raise the engine rpm enough to get the generator provide enough current to charge the battery.

If the ammeter needle moves in a negative (discharge) direction when the engine is revved up, you must reverse the two wires on the back of the ammeter.