

MAGNET REPLACEMENT

Refer to Section 6 of the manual for complete instructions.

First, remove the brushes from the housing and then remove the shaft and armature from the housing.

There are eight magnets in a FOURWINDS generator. Looking into either open end of the generator housing there are four rows of magnets, one row at 12 o'clock, one at 3 o'clock, one at 6 o'clock and one at 9 o'clock. The magnets change polarity every 90 degrees. The 12 and 6 o'clock magnets will have north polarity, and the magnets at 3 and 9 o'clock will have south polarity.

The magnets are polarized through the thickness of the magnets, not from end to end. To determine polarity, take a hand bearing compass and hold it to the convex or curved out side of a magnet. The compass needle will point either North or South. Separate the magnets in two groups, North and South. When installing the magnets in the housing, place two North magnets in a row in the 12 o'clock position. Alternate South magnets rows with North magnet rows to install four rows, 90 degrees apart, in the inner circumference of the housing.

The magnets are epoxied to the inside circumference of the generator housing. If you have to replace or reinstall a loose magnet use an epoxy steel resin. We use J-B Weld epoxy, either fast or regular set. If an epoxy steel resin is not available, use Marine Tex or equivalent. Follow the instructions on the epoxy container for proper curing time.

The magnet should have a very clean convex side. Be sure to remove all rust. Wipe it with acetone, or equivalent, before installation. The inner wall of the generator must be equally clean, down to shiny bare steel. Clean it with acetone also.

Spread the epoxy evenly over the entire surface of the convex side of the magnet. Slide the magnet in place. Position the magnets .915 inch from the bottom end of the housing, and .725 inch from the top (shaft end) of the housing. Push it tight to the adjacent magnet in the vertical row. If the two magnets are of the same polarity they will repel each other. This is correct. If the magnets attract each other in a row, you have incorrectly matched the polarity. Choose magnets in a vertical row which repel each other.

Because the magnets repel each other, they will have to be clamped in place until the epoxy cures. If the epoxy takes many hours to cure, leave it over night. If you have several magnets to install, it may take a several days.

There is approximately 1/2" space between the rows of magnets. If you have many magnets to replace, it is worth while cutting a stick or plastic 1/2" wide to act as a spacer while epoxying the magnets.