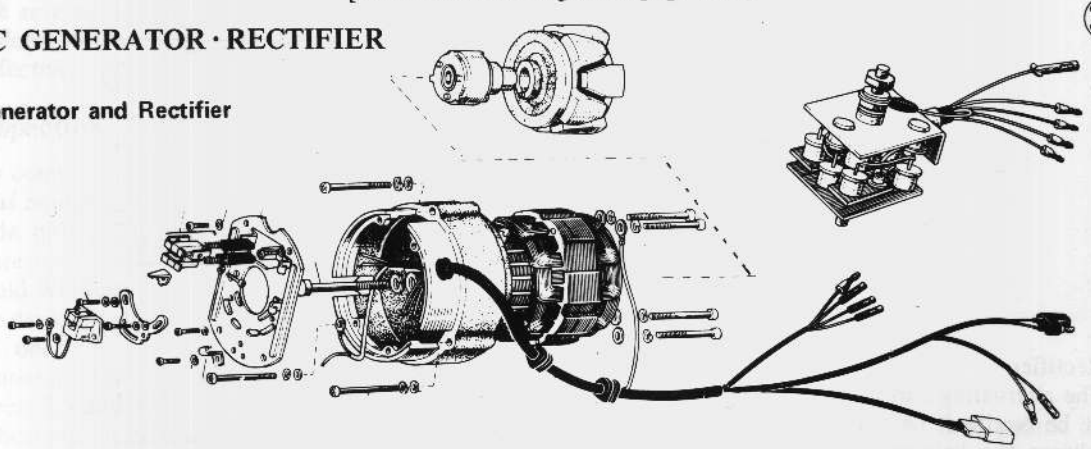
V-a H1 Electrical System

[H2 information begins on page 113.]

1. AC GENERATOR · RECTIFIER

H1 Generator and Rectifier

386



1) Construction and Operation

In the H1 an AC generator supplies all power for the ignition, lighting, charging circuits, etc. This AC generator differs from a DC generator in that it requires a rectifier, but its merit lies in its small size, light weight, and lack of parts liable to failure. In this generator, a magnetic field rotates inside the armature windings, and as the field cuts through the windings it induces voltage in them.

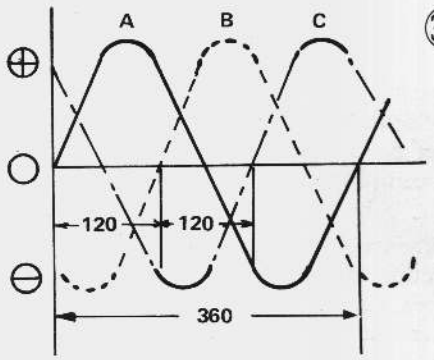
a. Field

The H1 generator has an electromagnetic field, and current to magnetize it is brought to the coils by two brushes which ride on the rotor's slip rings. When starting the engine and during periods of low engine rotation, field current is supplied by the battery. But when generator rotation increases and generated voltage exceeds battery voltage, the generator supplies its own field current (self-excitation method).

b. Armature

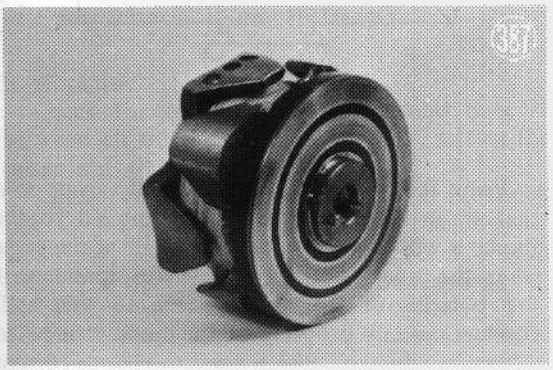
The armature, which is constructed as part of the generator housing, consists of three sets of coils wound on laminated cores. Each of the three coils, and therefore each phase of the three-phase generator output, is set 120° ahead of the next, and the relationship of the three waveform resultants is illustrated in Fig. 399.

389

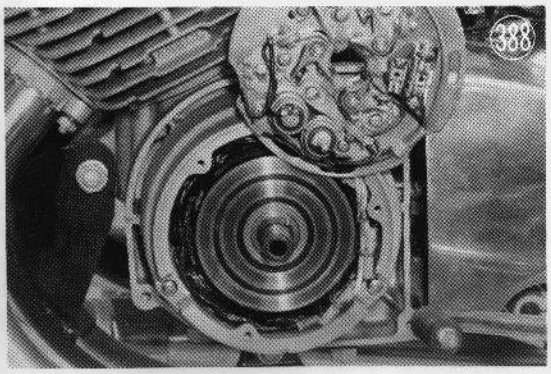


The three windings are "wye" connected for greater voltage output.

387



388



Wye Connected Armature

390