

V-b H2 Electrical System

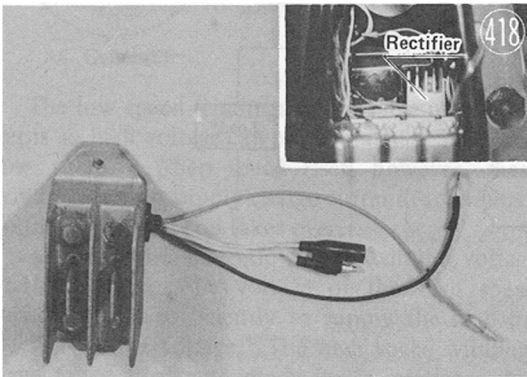
Introduction

This section deals with the rectifier, regulator and ignition system of the H2 only. See Section V-a for H1 information, for general information, or for an explanation of specific terms not explained here (e.g. thyristor, semiconductor, full-wave rectifier, etc.).

Note that the H2 contains two rectifier units. One is a combination rectifier/regulator used for all electrical applications except the ignition. The other rectifier referred to as the "ignition rectifier" is used solely to provide DC for the Magneto CDI ignition units.

1. RECTIFIER & VOLTAGE REGULATOR

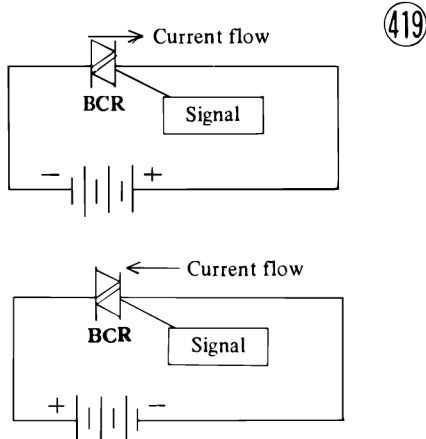
The H2 rectifier unit (Figure 418) performs the dual functions of current rectification and voltage



regulation. This has been made possible by replacing one of the rectifier diodes with a special thyristor, called a Bidirectional Controlled Rectifier.

The BCR will conduct in either direction after either a positive or negative voltage signal is applied to the gate lead; an ordinary thyristor will conduct in only one direction.

BCR



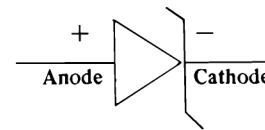
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Semiconductors in general are explained on page 102, and thyristors on page 109. One other semiconductor, a zener diode, is used in the regulator circuit. This special type of diode is briefly explained below to help you understand the H2 regulator operation.

Zener Diode

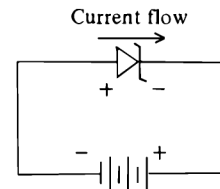
As in a normal diode, current will flow easily from the cathode to anode, and will not usually flow in the opposite direction. Unlike a normal diode, however, the diode will "break down", or conduct in the reverse direction, if enough voltage is applied in the reverse direction; when the voltage is lowered or removed, the diode will stop conducting and return to its normal state. The voltage at which the diode begins reverse conduction, is called the breakdown voltage, and can be set at the desired level when the diode is manufactured. This property of the zener diode makes it very useful in voltage regulator circuits.

Zener Diode



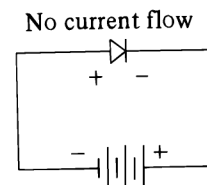
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ZD Current Flow



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Ordinary Diode



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