

*Instruction Manual for Model*  
**BD – 450-SV**  
*BELT DRIVEN 3600 RPM GENERATOR*

*Manufacturing of: Vehicle Mounted Generators • Hydraulic Generators*

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# **GENERAL INFORMATION**

## **MODEL: BD-450-SV**

GENERATOR..... BRUSHLESS

GENERATOR..... 3600 (60 Hz)

GENERATOR VOLTAGE..... 120

MOTOR STARTING..... 300% SURGE

VOLTAGE REGULATOR..... INHERENT

OUTPUT..... 4000 WATTS CONTINUOUS  
4500 WATTS PEAK AT  
100°F OIL TEMPERATURE

MAXIMUM SPEED..... 3750 RPM  
(3600 RPM IDEAL)

## **Initial Installation and Start-Up**

**Be sure you set the speed of the generator at approximately 62.5 HZ or 3750 RPM with NO electrical load on the generator.**

**By using this setting you will have approximately 60HZ (cycles) or 3600 RPM when you are running at full rated load.**

**One way this can be accomplished is by using a Photo Tachometer on our generator shaft.**

*A Photo Tachometer is an inexpensive tool that can be purchased at McMasters, Grainger, Sears or any other electrical supplier.*

## TECHNICAL INFORMATION

These self-excited and self-regulating generators, although overall dimensions have been reduced to a minimum, are designed for high-level electrical performance and the maximum in operating reliability.

### PRELIMINARY CHECKS:

Before touching the machines, perform a thorough and in depth visual inspection, checking that components are correctly connected up and that no cables or terminals are broken or loose.

### STARTING UP:

Make sure, when starting up, that cooling air intake and discharge openings are free and unblocked. We also recommend (when the machine operates in a dusty environment) do periodic checks to make sure it is properly ventilated

### THE IMPORTANCE OF SPEED:

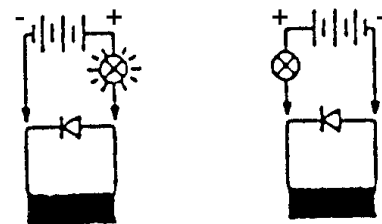
Frequency and voltage depend directly on rotation speed. This must be kept as constantly as possible on its nominal value no matter what the load. Drive motor speed control systems generally have a small drop in speed between no load and loaded conditions. We therefore recommend setting no load speed 3÷4% above nominal speed.

### CHECKING VOLTAGE:

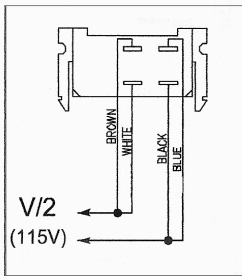
All the machines are regulated during factory testing. If voltage readings differ from the value indicated on the name plate, this maybe caused by a mistaken reading or by a different rotation speed and we recommend regulating motor speed in order to have nominal RPM under loaded conditions.

### CHECKING THE DIODES:

For the ohmmeter test it is best to disconnect the diode from its circuit. Measure continuity in one direction only. The test can also be made without disconnecting the diode from the circuit, using a 12V battery and a 45 watt light bulb (automobile light) as shown in the illustration. The light should turn totally on only in one direction, as shown below.

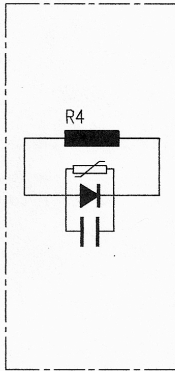


WIRING DIAGRAM BD 450-SV

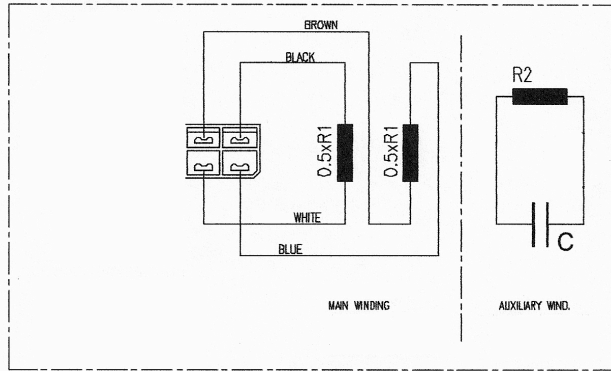


WIRING RESISTANCE AT 20° C

SIZE	STATOR $\Omega$	ROTOR $\Omega$	AUXILIARY $\Omega$
3.7	1.6	3.6	2.6



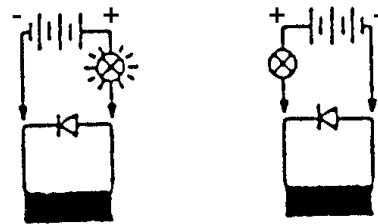
ROTOR



- STATOR -

# **TROUBLE SHOOTING**

PROBLEMS	CAUSES	REMEDIES
<b>ALTERNATOR EXCITATION FAILURE</b>	<ol style="list-style-type: none"> <li>1. Low Speed</li> <li>2. Faulty capacitor</li> <li>3. Faulty winding</li> </ol>	<ol style="list-style-type: none"> <li>1. Check RPM and set at nominal value.</li> <li>2. Check and replace.</li> <li>3. Check that winding resistance is as shown in the tables.</li> </ol>
<b>HIGH NO-LOAD VOLTAGE</b>	<ol style="list-style-type: none"> <li>1. Speed too high.</li> <li>2. Capacitor with high capacity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and adjust RPM's</li> <li>2. Check and replace</li> </ol>
<b>LOW NO-LOAD VOLTAGE</b>	<ol style="list-style-type: none"> <li>1. Speed too low.</li> <li>2. Faulty rotary diodes.</li> <li>3. Breakdown in windings.</li> <li>4. Capacitor with high capacity.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and adjust RPM's</li> <li>2. Check and replace.</li> <li>3. Check winding resistance, as per tables.</li> <li>4. Check and replace.</li> </ol>
<b>PROPER NO-LOAD BUT LOW LOADED VOLTAGE</b>	<ol style="list-style-type: none"> <li>1. Low loaded speed.</li> <li>2. Load too large.</li> <li>3. Rotary diodes short-circuited</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and regulate RPM.</li> <li>2. Check and change.</li> <li>3. Check and replace.</li> </ol>
<b>UNSTABLE VOLTAGE</b>	<ol style="list-style-type: none"> <li>1. Loose contacts.</li> <li>2. Uneven rotation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check connections.</li> <li>2. Check for uniform rotation speed.</li> </ol>
<b>NOISY GENERATOR</b>	<ol style="list-style-type: none"> <li>1. Broken bearings.</li> <li>2. Poor couplings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> <li>2. Check and repair.</li> </ol>



### WARRANTY TERMS

EACH FABCO POWER GENERATOR IS WARRANTED TO THE ORIGINAL OWNER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP UNDER NORMAL USE AND SERVICE FOR ONE (1) YEAR FROM THE DATE OF PURCHASE.

OUR OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPLACING OR REPAIRING, AT OUR OPTION, ANY PART OR PARTS PROVED TO BE SO DEFECTIVE WILL REQUIRE AN RGA NUMBER.

***ALL SHIPPING CHARGES ARE THE CUSTOMERS  
RESPONSIBILITY UNDER THIS WARRANTY.***