

## CONSTANT HP OPTION PCB 46S02519-0010 SCHEMATIC 45S02519-0010

### DESCRIPTION

Because of original design limitations or later system changes, it is not unusual to encounter centrifugal pumps and blowers that, along with their drive motors, are underloaded in normal operation. Often these systems can be increased in capacity by simply over-speeding them.

The Constant HP option allows the user to increase the Lancer I output frequency up to 75Hz. Voltage remains at the 60Hz setting.

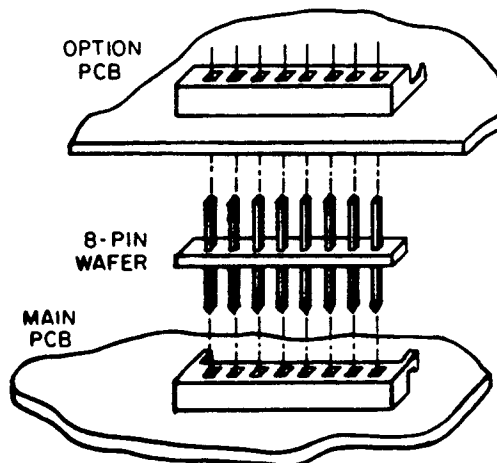
### CAUTION

USE OF THIS OPTION DOES NOT CHANGE THE PHYSICS OF MOTOR OR LOAD. LOAD TORQUE AND HP INCREASE WITH SPEED, BUT THE DRIVE CAN NOT PRODUCE MORE KW OR kVA THAN ITS RATING. THE PROPER APPLICATION OF THIS OPTION REQUIRES THAT THE EXACT LOADING CHARACTERISTICS BE KNOWN. IT IS ALSO RECOMMENDED THAT THE MECHANICAL DESIGNER BE CONSULTED TO DETERMINE IF THE HIGHER SPEED CAN BE TOLERATED SAFELY BY THE MECHANICAL SYSTEM.

### INSTALLATION

The Constant HP PCB mounts to three standoffs located on the bottom of the Inverter Main PCB (Refer to Figure 7-3 in the Instruction Manual). Connection is made to the Inverter Main PCB thru 104CONN. No connections are made to the Rectifier Main PCB. To install the Constant HP PCB, first install the standoffs onto the Inverter Main PCB.

Next, insert 8-pin wafer into 104CONN on the Inverter Main PCB (see illustration). Locate the Constant HP PCB so that pins on the wafers are lined up with holes on the back of the PCB behind 104CONN. Then push the PCB onto the wafer pins and standoffs.



When the Constant HP PCB is installed, switch 4SS on the Inverter Main PCB must be open (CCW). If the drive is shipped with the board in place, this switch will be open. The Voltage Profile option is also designed to be inserted in the same location as the Constant HP option. Only one of these two option PCBs may be used at a time.

If the Constant HP PCB is being added after the drive has been installed, refer to Section 1.2 in the Instruction Manual for instructions on how to update the 53SL number. A simplified diagram in the form of a pastie has been included with the Constant HP PCB. Modify the Signal Flow Diagrams in the Instruc-

### CHANGE RECORD

1	STD-2426	2/25/86
2	STD-2582	7/16/86

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tion Manual by pasting the pastie in position on Sheet 5.

#### ADJUSTMENTS

The Constant HP PCB is factory adjusted, and the pot settings should not be changed. When the board is installed, the drive frequency profile is re-scaled to produce 75Hz at the maximum settings of the speed command signal and the MAX SPEED pot. If a maximum frequency less than 75Hz, is desired, the MAX SPEED pot (on the Drive Adjustments PCB) should be adjusted. It is recommended that the Constant HP PCB pot settings be recorded prior to use for future reference if they should become altered.

When the Constant HP PCB is installed, it will be observed that Output Voltage remains close to the 60Hz value for any frequency above 60Hz.

If it is necessary to adjust the Constant HP PCB, contact the nearest Louis Allis district office for assistance.

#### LIMITATIONS

1. If the full load Amps/HP of the motor are less than 1.15, it may not be possible to reach 75Hz. The drive will go into a torque limit mode (TORQUE LIMIT LED on Drive Adjustments PCB will illuminate and frequency will not increase further. Some instability in current may also occur. The drive will eventually trip on OVERLOAD. A slight reduction in the OUTPUT VOLTAGE pot will usually extend the limit frequency. This limitation will be most pronounced if the input line voltage is low.

2. If the motor Full Load Amps are close to the rated drive amps, the drive may limit frequency due to excessive commutation circuit voltage. The indications and action to be taken will be similar to those above.

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