

For use with Lancer JR. Type L and L1 General Purpose AC Inverter Drives.

VOLTS/HERTZ METER

MODEL 92214 46S02670-0000

Before using this meter, a **TECHNICALLY QUALIFIED** individual who is familiar with the necessity of matching the V/HZ ratio of the inverter to the motor V/HZ profile should **READ THIS ENTIRE INSTRUCTION SHEET.**

DESCRIPTION

This kit provides all the necessary components to enable the user to accurately

calibrate the output Volts/Hertz (V/HZ) ratio of a Lancer JR. Type L or Type L1 inverter drive for a known motors voltage/frequency profile.

Although the meter scale is marked in volts, **IT IS NOT A VOLTMETER.** Rather, it has been designed to indicate to the user when the inverter V/HZ output has been properly adjusted to meet the driven motors V/HZ profile.

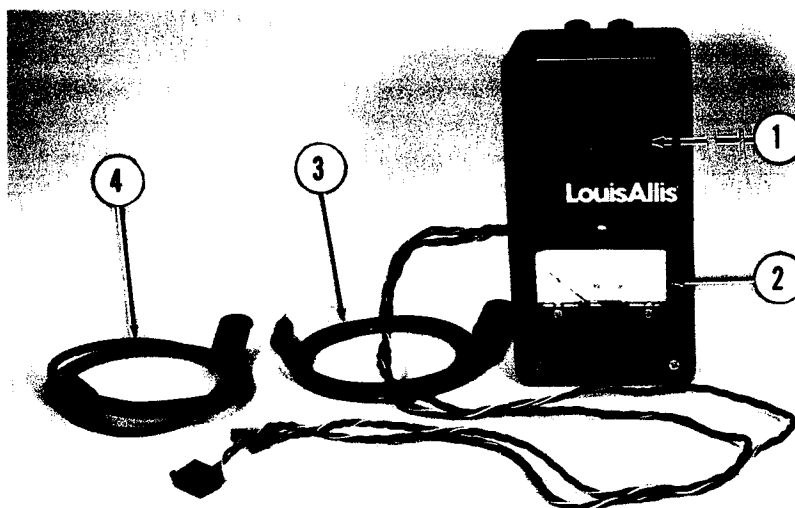


Figure 1

TABLE 1. KIT CONTENTS

ITEM	QTY	DESCRIPTION	PART NO.
1	1	Volts Per Hertz Meter PCB*	46S02670-0010
2	1	Meter*	05P00200-0040
3	1	Lead, Red	05P00034-0467
4	1	Lead, Black	05P00034-0468

* Mounted inside case.

CHANGE RECORD	DWG. NO. 02Y00025-0184
	SHEET 1 OF 6
	EFF. 9/30/85
/ STD 2523 9/17/85	

The inverter drive is shipped from the factory with its V/HZ properly adjusted to drive a 460V/60HZ or 230V/60HZ motor. If the driven motors profile and user application dictates, this ratio can be changed. The V/HZ meter enables the user to make this change quickly and accurately.

I. VERIFICATION

PROCEDURE

1. Use the following formula to calculate the voltage value the V/HZ meter will indicate when inverter has been properly adjusted:

$$60 \times \frac{\text{RATED MOTOR VOLTAGE}}{\text{RATED MOTOR FREQ.}} = \text{Meter indication}$$

EXAMPLE:

$$60 \times \frac{460\text{V}}{60\text{HZ}} = 460\text{V} \text{ (Meter indication when inverter V/HZ is correctly adjusted.)}$$

2. If inverter unit has a Remote Frequency/Fault Indicator mod kit, first set inverter for 60HZ, then disconnect all input power.

3. Ensure all input power is disconnected.

4. Remove the front cover and verify that the "CHARGE" LED is extinguished.

CAUTION

THE "CHARGE" LED BEING ILLUMINATED IMPLIES THAT HAZARDOUS DC BUS CAP POTENTIAL STILL EXISTS. AFTER THE "CHARGE" LED EXTINGUISHES, VERIFY THAT THERE IS NO LONGER A CHARGE BY MEASURING THE POTENTIAL ACROSS CAPACITOR C1 WITH A VOLTMETER.

WARNING

ADJUSTING THE INVERTER WITH POWER ON REQUIRES SPECIAL PRECAUTIONS: ALL TEST EQUIPMENT SHOULD BE CONNECTED AND DISCONNECTED WITH POWER OFF. HIGH VOLTAGE EXISTS ON THE REGULATOR BOARD; ALL POTENTIOMETERS SHOULD BE ADJUSTED WITH INSULATED HANDLE SCREWDRIVERS. ENSURE THAT V/H METER IS CONNECTED PROPERLY TO AVOID GROUNDING THE INVERTER. THE DC BUS REMAINS CHARGED FOR SEVERAL MINUTES AFTER POWER IS REMOVED.

5. Disconnect motor leads AT INVERTER TERMINALS BEFORE proceeding.

6. Plug ONE of the two V/HZ meter connectors into the Main Control PCB as follows:

- a. If inverter is a Lancer JR. Type L, insert meter plug designated CN11 into CN11 connector. See Figure 2.
- b. If inverter is a Lancer JR. Type L1, insert meter plug designated CT1 into CT1 connector. See Figure 3.

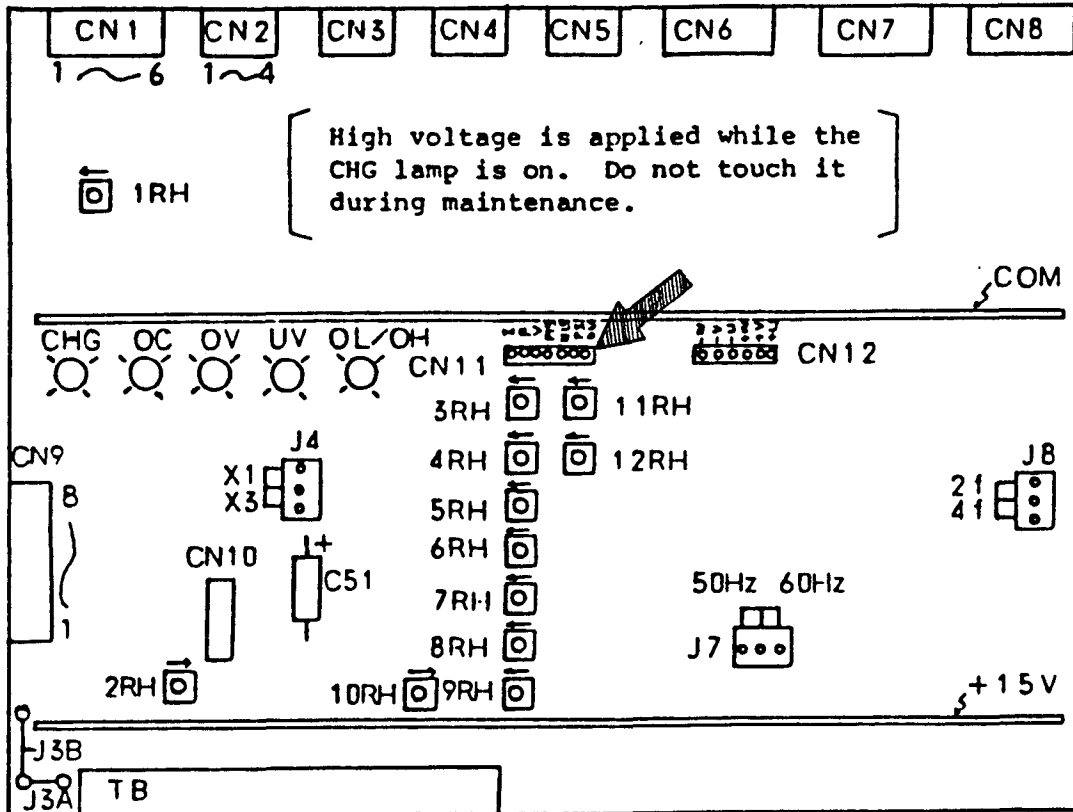
NOTE

If inverter unit has a Remote Frequency/Fault Indicator mod kit, remove CT1 cable assembly from Main Control PCB, then insert meter plug designated CT1 into CT1 connector.

- c. Neatly coil and secure unused plug lead.

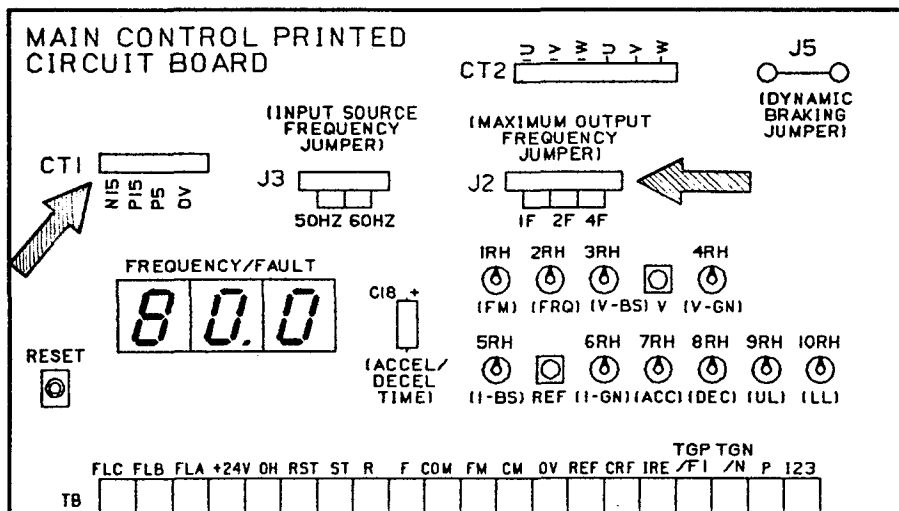
7. Connect the RED and BLACK meter clip leads to any two of the output terminals of the inverter.

DWG. NO. 02Y00025-0184
SHEET 2 OF 6
EFF. 9/30/85



Ref. 4V Fig.21

FIGURE 2. LANCER JR. TYPE L MAIN CONTROL PCB



Ref. TD.I.4U6.FIGJ.1

FIGURE 3. LANCER JR. TYPE L1 MAIN CONTROL PCB

DWG. NO. 02Y00025-0184
 SHEET 3 OF 6
 EFF. 9/30/85

8. Start inverter and adjust frequency for 60HZ.

9. V/HZ meter should indicate value calculated in step 1.

NOTE

If the output V/HZ profile for your application using a Lancer JR. Type Ll is different than the factory adjustment, proceed to section II, Readjustment Procedure. If the output V/HZ profile for your application using a Lancer JR. Type L is different than the factory adjustment, contact Louis Allis for assistance in readjusting inverter output.

10. Remove input power from inverter.

11. Verify that "CHARGE" LED is extinguished.

CAUTION

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12. Remove V/HZ meter leads from inverter.

13. Reconnect CT1 cable assembly to Main Control PCB if Remote Frequency/Fault Indicator is used.

14. Replace inverter front cover.

This completes the V/HZ adjustment verification procedure. The motor can NOW be reconnected to the inverter.

II. READJUSTMENT PROCEDURE

A. Initial Conditions - No Power Applied

1. Determine maximum operating frequency required.

2. See Figure 3. Place jumper J2 in correct position, as indicated below:

<u>MAXIMUM FREQUENCY</u>	<u>J2 POSITION</u>
80HZ	1f
160HZ	2f
320HZ	4f

3. Make sure switch on V/HZ meter is set for rated drive voltage.

4. Set pots on Main Control PCB as follows:

3RH	fully CW
7RH	fully CW
8RH	fully CW
9RH	fully CW
10RH	fully CCW

IMPORTANT

If the inverter has a Remote Frequency/Fault Indicator kit installed, proceed to C below. Otherwise, continue at B.

B. Readjustment of Inverter Without Remote Frequency/Fault Indicator

1. Apply power and start inverter. Adjust 2RH for maximum operating frequency, with speed control dial fully CW.

2. Adjust speed control dial for 60HZ.

DWG. NO. 02Y00025-0184
SHEET 4 OF 6
EFF. 9/30/85

3. Use the following formula to calculate the value the V/HZ meter will indicate when inverter has been properly readjusted:

$$60 \times \frac{\text{RATED MOTOR VOLTAGE}}{\text{RATED MOTOR FREQ.}} = \text{Meter indication}$$

EXAMPLE:

$$60 \times \frac{460\text{V}}{80\text{HZ}} = 345\text{V} \text{ (Meter indication when inverter VHZ is correctly readjusted.)}$$

4. Adjust 4RH for the V/HZ meter indication determined in step 3.

5. Readjust accel (7RH) and decel (8RH) to their midpoint settings.

6. Remove input power from inverter.

7. Verify that "CHARGE" LED is extinguished.

CAUTION

THE "CHARGE" LED BEING ILLUMINATED IMPLIES THAT HAZARDOUS DC BUS CAP POTENTIAL STILL EXISTS. AS AN ADDED SAFETY MEASURE, AFTER THE "CHARGE" LED EXTINGUISHES, VERIFY THAT THERE IS NO LONGER A CHARGE BY MEASURING THE POTENTIAL ACROSS CAPACITOR C1 WITH A VOLTMETER.

8. Remove V/HZ meter leads from inverter.

9. Replace inverter front cover.

This completes the V/HZ readjustment procedure. The motor can NOW be reconnected to the inverter.

C. Readjustment of Inverter With Remote Frequency/Fault Indicator

1. Disconnect V/HZ meter from Main Control PCB and reconnect Remote Frequency/Fault Indicator.

2. Apply power and start inverter. Adjust 2RH for maximum operating frequency, with speed control dial fully CW.

3. Adjust speed control dial for 60HZ.

4. Remove input power from inverter and reconnect V/HZ meter.

5. Use the following formula to calculate the value the V/HZ meter will indicate when inverter has been properly readjusted:

$$60 \times \frac{\text{RATED MOTOR VOLTAGE}}{\text{RATED MOTOR FREQ.}} = \text{Meter indication}$$

EXAMPLE:

$$60 \times \frac{460\text{V}}{80\text{HZ}} = 345\text{V} \text{ (Meter indication when inverter V/HZ is correctly readjusted.)}$$

6. Adjust 4RH for the V/HZ meter indication determined in step 5.

7. Readjust accel (7RH) and decel (8RH) to their midpoint settings.

8. Remove input power from inverter.

9. Verify that "CHARGE" LED is extinguished.

DWG. NO. 02Y00025-0184
SHEET 5 OF 6
EFF. 9/30/85

CAUTION

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10. Remove V/HZ meter leads from inverter.

11. Reconnect Remote Frequency/Fault Indicator CT1 cable assembly to Main Control PCB.

12. Replace inverter front cover.

This completes the V/HZ readjustment procedure. The motor can NOW be reconnected to the inverter.

DWG. NO. 02Y00025-0184
SHEET 6 OF 6
EFF. 9/30/85