

MOTOR CORE LOSS TEST SET  
(Modular)

Model Number \_CL10 \_CL25 \_CL60 XCL125

Serial Number

Version 1.1

**NEEDS PARTS LIST**

Rev 6/12/2017

CL125

MOTOR CORE LOSS TEST SET  
(Modular)

Model Number

CL125

Serial Number

Customer

Customer's Purchase Order Number

Manufacturing Date

# TABLE OF CONTENTS

	Section Number
DANGER / GENERAL SAFETY PRECAUTIONS	
MAIN SPECIFICATIONS	1
CONTROL LAYOUT (FIGURE 1)	2
CONTROL AND METERING DESCRIPTION	3
INSTALLATION	4
INTRODUCTION	5
START-UP PROCEDURE	6
STATOR TEST PROCEDURE	7
ARMATURE/ROTOR TEST PROCEDURE	8
CALIBRATION	9
ELECTRICAL SCHEMATICS	10
MAINTENANCE	11
PARTS LIST	12
PARTS ORDERING INFORMATION	13
RECOMMENDED SPARE PARTS	14
RETURNED MATERIAL	15
CUSTOMER COMMENTS / SUGGESTIONS	16
WARRANTY	
Attachment	

Newport 2520

**DANGER / WARNINGS**

**DANGER**

**Complete Grounding of this unit is necessary for the safe operation of this equipment. Disconnect inputs before ungrounding this equipment**

## **DANGER / WARNINGS**

### **GENERAL SAFETY PRECAUTIONS**



**CAUTION**



### **HIGH VOLTAGE**

**This equipment is capable of providing POTENTIALLY LETHAL VOLTAGES! Improper operation or test practices may result in injury or death to the operator or surrounding personnel.**

**The operation of High Voltage test equipment should only be performed by personnel familiar with HIGH VOLTAGE testing and safety procedures. The operator of this equipment must be aware of all hazards associated with High Voltage testing. The operator is responsible for himself and others in close proximity of the testing area.**

**Some General Safety Practices for working with High Voltage Test Equipment have been listed below for your reference.**

- **Become familiar with your instrument before performing an actual test**
- **Know your work area, check that all circuits are de-energized and locked out.**
- **Never work alone; always work with another qualified worker.**
- **Mark off entire work area with barriers and warning tape.**
- **Make all personnel aware of your testing activities.**
- **Be aware of dangerous conditions that may arise from energizing a test specimen.**
- **Never modify test equipment; modifications to equipment could introduce an unknown hazard or hinder a designed-in safety feature.**
- **DO NOT operate damaged equipment. Remove power, and do not use the equipment until safe operation can be verified by service-trained personnel.**

Phenix Technologies, Inc. assumes no liability for unsafe or improper use of test equipment.

## SECTION 1: MAIN SPECIFICATIONS

### MODEL CL125

Motor Core Loss Test Set with continuously variable output voltage and instrumentation for measurement of motor core losses.

INPUT: 440/480 VAC, 300 A, 1-phase, 50/60 Hz (or 575 VAC, 250 A)

#### AC OUTPUT:

30 V Tap:	Step	1	0	-	6 VAC @	4200 A
		2	6	-	12 VAC @	4200 A
		3	12	-	18 VAC @	4200 A
		4	18	-	24 VAC @	4200 A
		5	24	-	30 VAC @	4200 A

60 V Tap:	Step	1	0	-	12 VAC @	2100 A
		2	12	-	24 VAC @	2100 A
		3	24	-	36 VAC @	2100 A
		4	36	-	48 VAC @	2100 A
		5	48	-	60 VAC @	2100 A

90 V Tap:	Step	1	0	-	18 VAC @	1400 A
		2	18	-	36 VAC @	1400 A
		3	36	-	54 VAC @	1400 A
		4	54	-	72 VAC @	1400 A
		5	72	-	90 VAC @	1400 A

DUTY CYCLE: 5 minutes ON / 15 minutes OFF at maximum output

#### INSTRUMENTATION:

AC Voltmeter: Digital, LED display, true RMS responding.  
Scale: 0-19.999/90.00 VAC. Accuracy: +/- .5% F.S.

AC Currentmeter: Digital, LED display, true RMS responding.  
Scale: 0-4200 AAC. Accuracy: +/- .5% F.S.

AC Kilowattmeter: Digital, LED display.  
Scale: 0-19.999/125.00 kW. Accuracy: +/- .5% F.S.

#### STANDARD DESIGN AND SAFETY FEATURES:

- \* Main power circuit breaker with indicator lamp
- \* Fused control power circuits
- \* ON/OFF pushbutton control
- \* Meter hold switch to freeze meter readings
- \* External interlock provision with indicator lamp
- \* Thermal overload protection with indicator lamp
- \* Rugged steel cabinet with casters
- \* Separate voltmeter leads for greater meter accuracy
- \* 2 - 30 foot output cables
- \* RS-232/BCD

## MAIN SPECIFICATIONS

### CL125

INCLUDES: Data base software and Lap top with printer

DIMENSIONS: 50" W x 30" D x 52 1/2" H; 2,750 pounds

OPTIONS:

\_\_\_ 6 " Clamp Assembly

\_\_\_ Extra length Output Leads \_\_\_ ft. NOTE: Standard leads are 30 ft.

## SECTION 2: CONTROL AND METERING

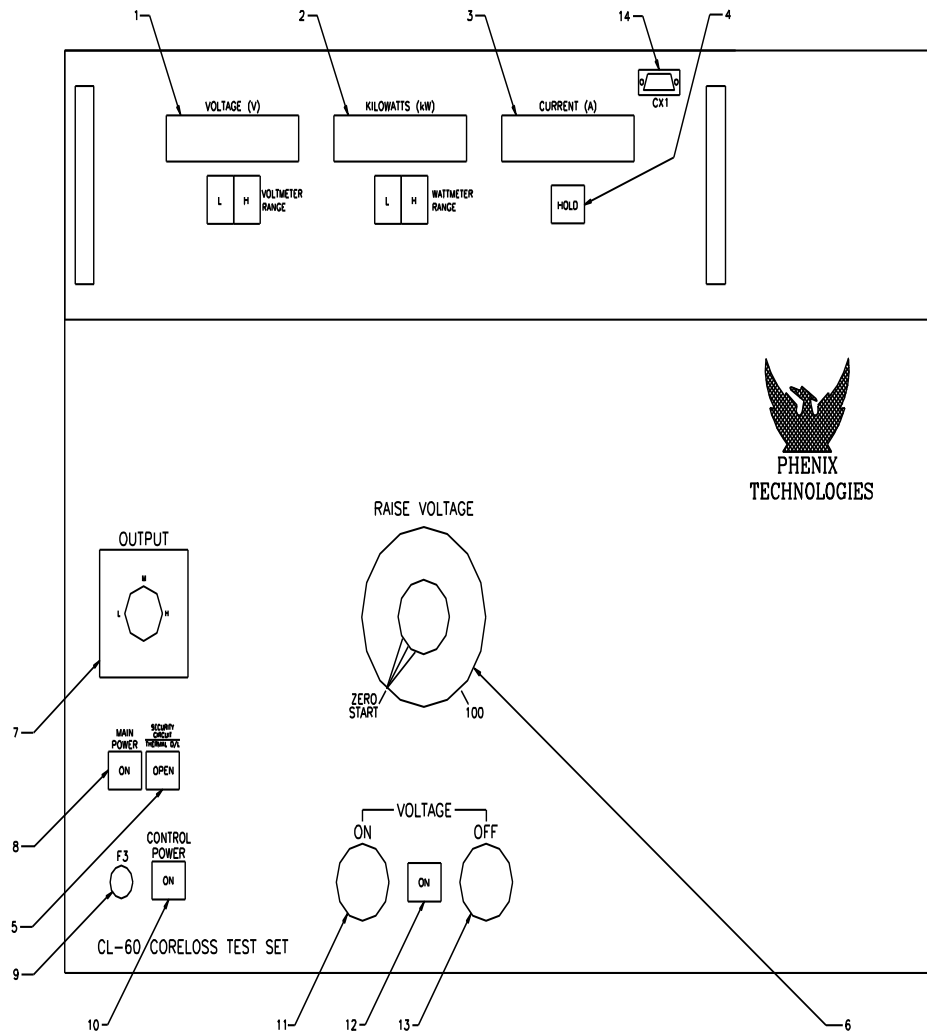


FIGURE 1

CONTROL AND METERING LAYOUT



## SECTION 3: CONTROL AND METERING DESCRIPTION (FIGURE 1)

1. DIGITAL VOLTMETER:           CL10: 0-5.00/15.00 VAC scale  
  CL25: 0-12.5/25.00 VAC scale  
  CL60: 0-19.999/60.00 VAC scale  
  CL125: 0-19.999/90.00 VAC scale
  
2. DIGITAL WATTMETER:        CL10: 0-10,000 W scale  
  CL25: 0-25,000 W scale  
  CL60: 0-60,000 W scale  
  CL125: 0-125,000 W scale
  
3. DIGITAL CURRENTMETER:   CL10: 0-667/2,000 AAC scale  
  CL25: 0-1,000/2,000 AAC scale  
  CL60: 0-2,000 AAC scale  
  CL125: 0-4,200 AAC scale
  
4. METER HOLD SWITCH: Freeze readings on all digital meters when ON.
  
5. SECURITY CIRCUIT / THERMAL OVERLOAD INDICATOR LAMPS: Lamp will light and de-energize test set when either external interlock circuit is open or thermal limit of main high current transformer is exceeded.
  
6. MANUAL RAISE VOLTAGE CONTROL: Vernier output voltage control knob. Rotate clockwise to increase voltage, counter-clockwise to decrease voltage. Must be in zero start position to energize test set.

(OR)

MOTORIZED VOLTAGE CONTROL: Press raise to increase or lower to decrease output level. Off zero will light when regulator is not in the zero (starting) position. Regulator controls only function when voltage is on.

7. OUTPUT SWITCH: Divides each output tap into steps. Continuous output voltage control is obtained when used in conjunction with the raise voltage control.

Output Switch	CL10		CL25	
	5.0 V Tap	15.0 V Tap	12.5 V Tap	25.0 V Tap
Low	0-1.67 V	0- 5.0 V	0- 4.16 V	0- 8.33 V
Med	1.67-3.34 V	5.0-10.0 V	4.16- 8.32 V	8.33-16.66 V
High	3.34-5.00 V	10.0-15.0 V	8.32-12.50 V	16.66-25.00 V

Output Step	CL60		CL125		
	30 V Tap	60 V Tap	30 V Tap	60 V Tap	90 V Tap
1	0 - 6 V	0-12 V	0- 6 V	0- 12 V	0- 18 V
2	6-12 V	12-24 V	6-12 V	12-24 V	18-36 V
3	12-18 V	24-36 V	12-18 V	24-36 V	36-54 V
4	18-24 V	36-48 V	18-24 V	36-48 V	54-72 V
5	24-30 V	48-60 V	24-30 V	48-60 V	72-90 V

## CONTROL AND METERING DESCRIPTION

8. MAIN POWER ON INDICATOR LAMP: Indicates that main power circuit breaker is on.
9. CONTROL POWER FUSE: Provides protection for all control and metering circuits.
10. CONTROL POWER ON INDICATOR LAMP: Indicates all control circuits energized.
11. VOLTAGE ON PUSHBUTTON: Energizes main high current transformer.
12. VOLTAGE ON INDICATOR LAMP: Indicates test set is energized.
13. VOLTAGE OFF PUSHBUTTON: De-energizes main high current transformer.
14. COMPUTER. (Optional)
15. (RESERVED)
16. (RESERVED)

## SECTION 4: INSTALLATION

- ◆ Position set in the desired location.
- ◆ Remove metering module by taking out screws on front panel and pulling out by both handles. Make sure all PC cards are fully seated in sockets. Replace module.
- ◆ Connect main service green lead to main power ground.
- ◆ Connect main service leads (WHITE and BLACK) to main power source.

CL10: 208/230 VAC, 50 A, 1 phase, 50/60 Hz or  
575 VAC, 20 A, 1 phase, 50/60 Hz

CL25: 440/480 VAC, 50 A, 1 phase, 50/60 Hz or  
575 VAC, 44 A, 1 phase, 50/60 Hz

CL60: 440/480 VAC, 135 A, 1 phase, 50/60 Hz  
575 VAC, 105 A, 1 phase, 50/60 Hz

CL125: 440/480 VAC, 300 A, 1 phase, 50/60 Hz or  
575 VAC, 250 A, 1 phase, 50/60 Hz

## SECTION 5: INTRODUCTION

The Phenix Technologies Core Loss Test Set is a continuously variable low voltage, high current power supply for testing stators, rotors, and armature cores. The basic test set includes complete instrumentation, input/output/voltmeter cables and computer/printer. The latter being used for determining initial test levels and evaluating final test results.

The test set is used to energize the motor core steel to 85 kilolines/square inch flux density while measuring applied voltage, current, and watts. The test voltage required to excite the core to 85 kilolines/square inch flux density is calculated by the computer based on core dimensional data manually entered by the operator.

Actual test data (volts, amps, watts) is manually entered into the computer by the operator. The computer then takes the entered test data and calculates apparent power factor and the watts per pound of core weight.

A number of factors can influence the readings obtained from "good" motor cores. These factors range from manufacturers design criteria, to type of core steel, to steel stamping and assembly process. The computer bases its pass/fail criteria on the following generally accepted levels of core performance:

Apparent Power Factor: .1 to .7 Good  
.7 to .9 Marginal  
.9 to 1.0 Bad

Watts per Pound: 1-6 W/lb. Good  
6-10 W/lb. Marginal  
>10 W/lb. Bad

In all cases, the computer will then ask you to perform a hot spot check by physically checking the core for any localized areas of heating. If areas are found, they should be marked for further inspection and possible repair.

## SECTION 6: START-UP PROCEDURE

1. Loop heavy output cable thru an adequately sized stator core.
2. Plug ends of heavy output cable into common and low tap jacks on side of test set. Note: Low tap jack may be covered by security access plate. Slide access plate completely to one side to expose low tap jack.
3. Make sure both ends of cable are fully seated in the jacks and turned clockwise. Failure to do so may result in overheating of the plugs and connectors.
4. Loop voltmeter cable thru stator core and connect plugs to the common and low tap voltmeter jacks.
5. Turn on main power circuit breaker. Main power lamp, control power lamp, and all digital meters should light.
6. Turn on computer and printer. Check for power on indicating lamps.
7. Turn raise voltage control knob to full counter-clockwise (zero start) position.
8. Set output switch to step #1 or Low (L) position.
9. Push the voltage on pushbutton. The voltage on lamp beside the pushbutton should light.
10. MANUAL VOLTAGE CONTROL: Slowly turn output voltage control knob in a clockwise direction.  
  
(OR)  
  
MOTORIZED VOLTAGE CONTROL: Press raise button to increase output level.
11. All digital output meters should be functional.
12. MANUAL VOLTAGE CONTROL: Return output voltage control knob to zero. De-energize test set by pushing the off pushbutton. Voltage on indicator lamp should now be off.
13. Remove power and voltmeter cable from the low tap jacks.
14. Slide security access plate to the left to expose the high tap.
15. Reconnect power and voltmeter cables to corresponding jacks.
16. Repeat Steps 7 thru 9 above to determine if high tap is functional.

## SECTION 7: STATOR TEST PROCEDURE

1. Measure and record the following stator core dimensions. Note that all dimensions must be accurate to within 1/64 of an inch. Refer to diagram on next page for location of dimensions.

Core Diameter  
 Back Iron Width  
 Slot Depth  
 Vent Width (If no vents exist, enter 0.)  
 Number of Vents (If no vents exist, enter 0.)  
 Length of Core

2. Turn on Main Power Circuit Breaker, turn on Computer and Printer.
3. Following computer prompts, enter customer, job number, and data recorded above. Computer will then calculate and print out test voltage required to obtain desired flux density in back iron.
4. Place output power cable loop thru center of stator. Connect one side of power cable to the "common" jack, connect the other end to the voltage tap which is closest to the test voltage recommended by the computer in Step 3 above.
5. Place voltmeter cable thru center of stator. Plug ends of voltmeter cable into the common voltmeter terminal and voltmeter terminal corresponding to the voltage tap being used.
6. Place output switch in the L (low) position. Place raise voltage control knob in full counter-clockwise position.
7. Close all interlocks if security circuit lamp is lit.

NOTE: Before energizing test set, note maximum current ratings of each tap.

CL10: 5 V tap rated 2000 A maximum 30 minutes ON/60 minutes OFF  
 15 V tap rated 667 A 30 minutes ON/60 minutes OFF  
 CL25: 12.5 V tap rated 2000 A maximum 30 minutes ON/60 minutes OFF  
 25 V tap rated 1000 A 30 minutes ON/60 minutes OFF  
 CL60: 30 V tap rated 2000 A 30 minutes ON/60 minutes OFF  
 60 V tap rated 1000 A 30 minutes ON/60 minutes OFF  
 CL125: 30 V tap rated 4200 A 30 minutes ON/60 minutes OFF  
 60 V tap rated 2100 A 30 minutes ON/60 minutes OFF  
 90 V tap rated 1400 A 30 minutes ON/60 minutes OFF

8. Energize test set by pressing the voltage on pushbutton. Slowly raise voltage until desired (calculated by computer) test voltage is attained.
9. If you are unable to attain desired voltage in the output L position, de-energize the test set, return raise voltage control to full counter-clockwise position and place output switch on M (medium).

## STATOR TEST PROCEDURE

10. Energize test set. (Note: Voltage will instantly appear on your voltmeter. This voltage will be the voltage you left off at in the full output L position.) Raise voltage control knob until desired test voltage is achieved.
10. If you do not attain desired test voltage in the output M position, de-energize the test set, return raise voltage control to full counter clockwise position and place output switch on H (high) position. Repeat operation of energizing test set and raising voltage.
11. If you still do not attain desired test voltage, move output cable and voltmeter lead to the higher voltage tap.
12. Repeat Steps 7-12 above until desired test voltage is attained.
13. When desired test voltage is attained, freeze all meter readings by placing meter hold switch in the "ON" position.
14. Following the computer prompts, enter meter readings into the computer.
15. Return meter hold switch to the off position.
16. Computer will now print out test results based on acceptance criteria discussed in the Introduction Section (5) of this manual.
17. Computer will then prompt you to continue exciting the core for at least 5-10 minutes and ask you to physically check for "hot spots". If any areas are found, mark them for possible repair. If you wish to speed up the hot spot checking process, increase the amperage reading to 2 to 3 times those recorded in Step 15 above for 1 to 2 minutes. When over-exciting the core, always keep in mind the current limitations of each tap. When in doubt, refer to the Main Specifications Section (1) of this manual.
18. Following computer prompt, enter findings on hot spot check.
19. Computer will print out if core passed or failed hot spot check.

## SECTION 8: ARMATURE / ROTOR TEST PROCEDURE

1. Measure and record the following stator core dimensions. Note that all dimensions must be accurate to within 1/64 of an inch. Refer to diagram on next page for location of dimensions.

Core Diameter  
 Back Iron Width  
 Slot Depth  
 Vent Width  
 Number of Vents  
 Length of Core  
 Number of Vent Holes  
 Vent Hole Diameter

2. Turn on Main Power Circuit Breaker, turn on Computer and Printer.
3. Following computer prompts, enter customer, job number, and data recorded above. Computer will then calculate and print out test voltage required to obtain desired flux density.
4. Connect one "C" clamp cable plug to the "common" jack on one side of the test set. Connect second "C" clamp cable plug to the voltage tap which is closest to the test voltage recommended by the computer in Step 3 above. Fasten clamps to opposite ends of armature or rotor shaft. (Be sure to avoid clamping at bearings fit points.) The armature or rotor shaft will complete the test circuit thru the core.
5. Place voltmeter lead thru spokes or vent holes. If this is not possible, use second set of voltmeter leads (with clips on ends) and clip voltmeter leads to shaft clamps.
6. Plug ends of voltmeter cable into "common" voltmeter terminal and voltmeter terminal corresponding to the voltage tap being used.
7. Place output switch in the L (low) position. Place raise voltage control knob in full counter-clockwise position.
8. Close all interlocks if security circuit lamp is lit.

NOTE: Before energizing test set, note maximum current ratings of each tap.

CL10: 5 V tap rated 2000 A maximum 30 minutes ON/60 minutes OFF  
 15 V tap rated 667 A 30 minutes ON/60 minutes OFF  
 CL25: 12.5 V tap rated 2000 A maximum 30 minutes ON/60 minutes OFF  
 25 V tap rated 1000 A 30 minutes ON/60 minutes OFF  
 CL60: 30 V tap rated 2000 A 30 minutes ON/60 minutes OFF  
 60 V tap rated 1000 A 30 minutes ON/60 minutes OFF  
 CL125: 30 V tap rated 4200 A 30 minutes ON/60 minutes OFF  
 60 V tap rated 2100 A 30 minutes ON/60 minutes OFF  
 90 V tap rated 1400 A 30 minutes ON/60 minutes OFF



## ARMATURE / ROTOR TEST PROCEDURE

9. Energize test set by pressing the voltage on pushbutton. Slowly raise voltage until desired (calculated by computer) test voltage is attained.
10. If you are unable to attain desired voltage in the output L position, deenergize the test set, return raise voltage control to full counter-clockwise position and place output switch on M (medium).
11. Energize test set. (Note: Voltage will instantly appear on your voltmeter. This voltage will be the voltage you left off at in the full output L position.) Raise voltage control knob until desired test voltage is achieved.
12. If you do not attain desired test voltage in the output M position, deenergize the test set, return raise voltage control to full counter-clockwise position and place output switch on H (high) position. Repeat operation of energizing test set and raising voltage.
13. If you still do not attain desired test voltage, move output cable and voltmeter lead to the higher voltage tap.
14. Repeat Steps 7-12 above until desired test voltage is attained.
15. When desired test voltage is attained, freeze all meter readings by placing meter hold switch in the "ON" position.
16. Following the computer prompts, enter meter readings into the computer.
17. Return meter hold switch to the off position.
18. Computer will now print out test results based on acceptance criteria discussed in the Introduction Section (5) of this manual.
19. Computer will then prompt you to continue exciting the core for at least 5-10 minutes and ask you to physically check for "hot spots". If any areas are found, mark them for possible repair. If you wish to speed up the hot spot checking process, increase the amperage reading to 2 to 3 times those recorded in Step 15 above for 1 to 2 minutes. When over-exciting the core, always keep in mind the current limitations of each tap. When in doubt, refer to the Main Specifications Section (1) of this manual.
20. Following computer prompt, enter findings on hot spot check.
21. Computer will print out if core passed or failed hot spot check.

## SECTION 9: CALIBRATION

### CL125

All calibration potentiometers are accessible by removing metering module and reinstalling on extender cables. Calibration potentiometers are located on plug-in PC boards in the module.

#### AC Voltmeter

- a. Connect a standard true RMS responding AC voltmeter (0-30 VAC) between common and 30 volt output terminals.
- b. Connect common and 30 volt voltmeter terminals to their respective output terminals.
- c. Set voltmeter range selector switch on control panel to L (low) position.
- d. Set output voltage to #3 step position.
- e. Energize test set and raise output until 18 VAC is read on standard meter.
- f. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R4) on A2, PCB 1128.
- g. Check calibration at various points (i.e. 1, 2, 5, 10, 15 VAC).
- h. De-energize test set. Connect standard true RMS voltmeter (0-90 VAC) between common and 90 volt output terminals.
- i. Connect common and 90 volt voltmeter terminals to their respective output terminals.
- j. Set output voltage to #1 step position.
- k. Energize test set and raise output until 18 VAC is read on standard meter.
- l. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R2) on A2, PCB 1128.
- m. Check calibration at various points (i.e. 1, 2, 5, 10, 15 VAC).
- n. De-energize test set and set output voltage to #5 step position.
- o. Set voltmeter range to H (High) position.
- p. Energize test set and raise output until 90 VAC is read on standard meter.
- q. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R10) on A2, PCB 1128.
- r. Check calibration at various points (i.e. 10, 20, 50, 75 VAC). NOTE: It will be necessary to select various output steps to perform this.
- s. De-energize test set. Connect standard true RMS voltmeter (0-60 VAC) between common and 60 volt output terminals.

## CALIBRATION

### CL125

- t. Connect common and 60 volt voltmeter terminals to their respective output terminals.
- u. Set output voltage to #5 step position.
- v. Energize test set and raise output voltage until 60 VAC is read on standard meter.
- w. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R3) on A2, PCB 1128.
- x. Check calibration at various points (i.e. 10, 20, 30, 50 VAC). NOTE: It will be necessary to select various output steps to perform this.
- y. De-energize set.

#### AC Currentmeters

- a. Connect a standard 5000 A current transformer and true RMS responding meter to output cables.
- b. Connect output lead between common and 30 volt terminals.
- c. Set output to #1 step position.
- d. Energize test set and raise output until 4200 A is read on standard meter. NOTE: It may be necessary to go to higher step positions to reach required current.
- e. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R2) on A5, PCB 1128.
- f. Check calibration at various points (i.e. 200, 500, 1000, 2000 A). NOTE: It may be necessary to select various output steps to perform this.
- g. De-energize test set and reconnect output leads to common and 60 volt output terminals.
- h. Set output to #1 step position.
- i. Energize test set and raise output until 2100 A is read on standard meter. NOTE: It may be necessary to go to higher step positions to reach required current.
- j. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R3) on A5, PCB 1128.
- k. Check calibration at various points (i.e. 100, 250, 500, 1000 A). NOTE: It may be necessary to select various output steps to perform this.
- l. De-energize test set and reconnect output leads to common and 90 volt output terminals.
- m. Set output to #1 step position.

## CALIBRATION

### CL125

- n. Energize test set and raise output until 1400 A is read on standard meter. NOTE: It may be necessary to go to higher step positions to reach required current.
- o. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R4) on A5, PCB 1128.
- p. Check calibration at various points (i.e. 50, 100, 400, 800 A). NOTE: It may be necessary to select various output steps to perform this.
- q. De-energize test set.

#### Wattmeter

NOTE: For maximum accuracy, calibration should be done at the highest load available for each tap. In the absence of the appropriate core to do this, the output cables may be substituted.

- a. Select L (LO) wattmeter range.
- b. Connect output leads between common and 30 volt output terminals.
- c. Connect a standard wattmeter with a range appropriate for the load being used. Typical hookup will connect the voltage input of the wattmeter to the voltmeter terminals and use a current transformer to drive the current input. If the output leads are being used for a load, the output terminals must be externally connected to the voltmeter terminals.
- d. Energize test set and raise output to 16-18 kW.
- e. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R4) on A3, PCB 1128.
- f. Check calibration at various points.
- g. De-energize test set and reconnect to 60 volt output terminal.
- h. Energize test set and raise output to 16-18 kW.
- i. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R3) on A3, PCB 1128.
- j. Check calibration at various points.
- k. De-energize test set and reconnect to 90 volt output terminal.
- l. Energize test set and raise output to 16-18 kW.
- m. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R2) on A3, PCB 1128.
- n. Check calibration at various points.

## CALIBRATION

### CL125

- o. De-energize test set and reconnect to maximum load available.
- p. Select H (High) wattmeter range.
- q. Energize test set and raise output to maximum level allowed by current/voltage limitations of set or permitted by load whichever is less.
- r. Compare panel meter to standard meter. If recalibration is necessary, adjust calibration potentiometer (R10) on A3, PCB 1128.
- s. Check calibration at various points.
- t. De-energize test set.

Calibration is now complete. Turn off main power. Replace metering module.

## SECTION 10: ELECTRICAL SCHEMATICS

### CL125

	Drawing Number	Description
1.	9307300	CL125 Core Loss Test Set (Power Section)
2.	-01-P071 A1	Voltage Metering
3.	-01-P071 A4	Current Metering
4.	PCB1226	Core Loss Control/Metering
5.	-01-E110	+/-15 VDC Power Supply
6.	-01-P120 1 of 2	BCD/RS232 Meter Interface
7.	-01-P120 2 of 2	BCD/RS232 Opto-Isolation
8.	-01-P081	Newport 2520 for PCB 1074 Interface
9.	-01-P053	Regulator Drive Switching Unit

## SECTION 11: MAINTENANCE

No solution or chemical any stronger than ordinary mild soap and water solution should be applied to the cabinet area of this unit. Care must be used when cleaning the meter faces and console panel. Abrasives may remove printing and descriptive titles and scratch meter faces. When cleaning, always have unit disconnected from power source.

**CAUTION:** Never attempt to clean inside the unit, as the cleaning solution may cause damage to the electronic components.

In the event it becomes necessary to replace any parts, a complete description can be found with the supplied parts list.

## SECTION 12: PARTS LIST



## **SECTION 13: PARTS ORDERING INFORMATION**

Replacement parts are available from Phenix Technologies, Inc.

Changes to Phenix Technologies' products are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest technical improvements developed in our Engineering Department. It is, therefore, important when ordering parts to include the serial number of the unit as well as the part number of the replacement part.

When your purchase order is received at our office, a representative of Phenix Technologies will contact you to confirm the current price of the part being ordered. If a part you order has been replaced with a new or improved part, an Applications Engineer will contact you concerning any change in part number.

Your order for replacement parts should be sent to:

Replacement Parts Department  
Phenix Technologies, Inc.  
75 Speicher Drive  
Accident, Maryland 21520

## SECTION 14: RECOMMENDED SPARE PARTS

In order to maintain your set in full operating condition with a minimum of down time, the following spare parts should be kept on hand to avoid unnecessary phone calls, expensive modes of shipment, delays in repairs, etc. Pricing is available upon request.

Part Number	Description	Quantity
1506525	Meter, 2520-3-F2M	1
1603603	Fuse, 3 A, 250 V	2
	Brush for Staco 2520 Variac	1
1420250	Lamp, Sylvania 6S6	3
1420145	Lamp, 28 V	3
1891926	Brush for Staco 6020 Variac	2

## **SECTION 15: RETURNED MATERIAL**

If for any reason it should become necessary to return this equipment to the factory, the Service Department of Phenix Technologies, Inc. must be given the following information:

Name Plate Information  
Model Number  
Serial Number  
Reason for Return  
Cause of Defect

If Phenix Technologies, Inc. deems return of the part appropriate, it will then issue a "Authorization for Return".

If return is not deemed advisable, other inspection arrangements will be made.

NOTE: Material received at this plant without the proper authorization shall be held as "Customer's Property" with no service until such time as the proper steps have been taken.

Your cooperation is requested in order to ensure prompt service.



## **WARRANTY**

Phenix Technologies, Inc. warrants to the original purchaser of any new merchandise that the merchandise is free from defects in material and workmanship under normal use and service for a period of 18 months from the date of shipment. The obligation of Phenix Technologies, Inc. under this warranty is limited, in its exclusive option, to repair, replace, or issue credit for parts or materials which prove to be defective, and is subject to purchaser's compliance with the Phenix Technologies, Inc. warranty claim procedure as set forth below. The happening of any one or more of the following events will serve to void this warranty and defect or damage resulting therefrom is specifically excluded from warranty coverage:

- A. Defects due to accident, negligence, alteration, modification, faulty installation by purchaser or purchaser's agents or employees, abuse, or misuse.
- B. Attempted or actual dismantling, disassembling, service or repair by any person, firm, or corporation not specifically authorized in writing by Phenix Technologies, Inc.
- C. Defects caused by or due to handling by carrier, or incurred during shipment, transshipment, or other move.

This warranty covers only those parts and/or materials deemed by Phenix Technologies, Inc. to be defective within the meaning of this warranty. The liability of Phenix Technologies, Inc. shall be limited to the repair, replacement, or issuance of credit for parts deemed defective within the meaning of this warranty. Costs incurred by purchaser for labor or other expenses incidental to the inspection, repair, replacement, or issuance of credit for such parts and/or material shall be the sole responsibility of purchaser. This warranty shall not apply to any accessories, parts, or materials not manufactured or supplied by Phenix Technologies, Inc. and if, in the sole discretion of Phenix Technologies, Inc., purchaser's claim relates to any materials or workmanship manufactured or performed by the supplier of a component part, or of the manufacturer of a device of which the defective part is a component, Phenix Technologies, Inc. reserves the right to disclaim liability under this warranty and to direct that the purchaser deal directly with such supplier or manufacturer. Phenix Technologies, Inc. agrees to assist the purchaser in processing or settling any such claims without prejudicing its position as to liability.

### **Warranty Claim Procedure**

Compliance with the following warranty claim procedure is a condition precedent to the obligation of Phenix Technologies, Inc. under this warranty.

- A. Purchaser must notify Phenix Technologies, Inc. in writing by certified or registered mail, of the defect claimed within 18 months after date of original shipment. Said notice shall describe in detail the defect, the defective parts and/or part, and the alleged cause of defect.
- B. At the exclusive option of Phenix Technologies, Inc., purchaser shall dismantle or disassemble at purchaser's cost and expense and shall ship the defective part or material prepaid to and from Phenix Technologies, Inc., Accident, Maryland 21520, for inspection, or permit an authorized service representative of Phenix Technologies, Inc. to inspect the defective part or material at purchaser's premises. If Phenix Technologies, Inc. shall inspect the part or material at the purchaser's premises, purchaser shall provide facilities for, and at purchaser's cost and expense, dismantle, disassemble, or otherwise make accessible the subject part of material whether or not same is a component of or installed in a device other

## WARRANTY

than that manufactured or supplied by Phenix Technologies, Inc. If disclosure shows that the defect is not one for which Phenix Technologies, Inc. is liable, the purchaser agrees to reimburse Phenix Technologies, Inc. for all expense incurred.

- C. Upon receipt of the defective part or material, or after access to same, Phenix Technologies, Inc. shall inspect the part or material to determine the validity of purchaser's claim.

The validity of any warranty claim, purchaser's compliance with Phenix Technologies, Inc. warranty claim procedure, the obligation to either repair, replace, or issue credit, or direct the purchaser to deal directly with a manufacturer or supplier are to be determined solely and exclusively by Phenix Technologies, Inc. and any determination so made shall be final and binding.

This warranty is expressly in lieu of all other warranties expressed or implied on the part of Phenix Technologies, Inc., including the warranties of merchantability and fitness for use, and consequential damages arising from any breach thereof and Phenix Technologies, Inc. neither assumes nor authorizes any other person, firm, or corporation to assume any liability or obligation in connection with this sale on its behalf and purchaser acknowledges that no representations except those made herein have been made to purchaser.

