This Procedure is for:

Power Lynx 1: 14KW and smaller

Note: There are tables at the end of this document that define the limits of all measured values. If any measured value exceed the limits of these tables contact DSPM for approval before continuing with the procedure.

1. Turn off all breakers in the inverter
2. Ensure the bypass switch is in the Bypass/Manual position
3. Record the System information in the table below.

System Information form System Label			
Model / Unit S/O	**KVA from S/O**	**Vin from S/O**	**Vout from S/O**

4. Check for loose connections
5. Check that all connectors are properly connected
6. Measure the Resistance of the bottom (output) of the Input Circuit Breaker. The measurement should be greater then 20K ohms.

	Input Short check
	CB1 OFF, CB2 OFF, CB3 OFF
Actual	

7. Measure the Resistance of the bottom (UPS side) of the DC Breaker to frame for each pole. The measurement should be greater then 20k ohms.

	DC Bus Short check
	CB1 OFF, CB2 OFF, CB3 OFF
Actual	

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8. Turn on the feed power to the UPS (NOT the Input Breaker) and verify that the voltage at the top of the Input Terminal Blocks (TB1) are correct as the System Label, and record in the proper row for the input voltage as specified on the System label of the unit. See Table #1 for limits.

Input Voltage					
CB1 OFF, CB2 OFF, CB3 OFF					
Input	G-N	G-H_1	G-H_2	N-H_1	H_1-H_2
120Vac					
208Vac					
240Vac					
277Vac					

9. Verify the DC voltage at the top of the Battery Breaker (CB2) is the correct polarity and the voltage is correct and record in the table below. See Table #2 for limits

	Battery Voltage
	CB1 OFF, CB2 OFF, CB3 OFF
Actual	

10. Turn on / Close the Battery Breaker (CB2), and observe the display. Nothing should happen on the display.
11. Record the voltage at the bottom or top of the Battery Breaker (CB2) in the table below. See Table #2 for limits.

	Battery Voltage
	CB1 OFF, CB2 ON, CB3 OFF
Actual	

12. Turn on the Input Circuit Breaker (CB1), and observe the display. The display should cycle though the indicators doing a self-check.
13. Measure and Record the voltage at the bottom or top of the Input Circuit Breaker (CB1) in the table below. The voltage should not vary more then one (1Vac) volt from the measurement taken in step 7.

	Input Voltage					
	CB1 ON, CB2 ON, CB3 OFF					
	208Vac or 240Vac			120Vac, or 277Vac		
	G-H_1	G-H_2	H-H	G-N	N-H	G-H
Actual						

14. The Display after the self-check should indicate that the unit is in bypass.

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15. Measure and record the voltage at the top of the Output Circuit Breaker (CB3) in the table below. See Tables #3A, 3B or 3C for limits

	0utput Voltage					
	CB1 ON, CB2 ON, CB3 OFF					
	208Vac or 240Vac			120Vac, or 277Vac		
	$G\text{-}H_1$	$G\text{-}H_2$	H-H	G-N	N-H	G-H
Actual						

16. Turn on the Output Breaker(s) and measure and record the output voltages at the top of the output terminal block. See Tables #1 for limits.

	Input Voltage					
	CB1 ON, CB2 ON, CB3 ON					
	208Vac or 240Vac			120Vac, or 277Vac		
	$G\text{-}H_1$	$G\text{-}H_2$	H-H	G-N	N-H	G-H
Actual						

17. Energize all loads attached to the inverter.

18. Using an amp meter verify the output current does not exceed the power rating of the unit and the output voltages are still as specified by the system label. Record the reading in the table below taken form the Output Terminal Blocks (TB2). See Tables 3A, 3b, or 3C for voltage limits.

	Output Voltage and Current						
	CB1 ON, CB2 ON, CB3 ON						
	208Vac or 120/240Vac				120Vac, or 277Vac		
	G-N	$N\text{-}H_1$	$N\text{-}H_2$	H-H	G-N	N-H	G-H
Actual Voltage							
	G Amps	N Amps	H_1 Amps	H_2 Amps			
Actual Current							

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19. Calculate the KW load on the unit and verify that it does not exceed the KW rating as per the System Label by using output currents and voltages with the following formulas.
    a. For 120Vac output:
        i. (N-H Vac) X (H amps) X .7 / 1000 = KW
    b. For 120/240Vac or 120/277Vac output
        i. ((N-H_1 Vac) X (H_1 amps) X .7 / 1000) + ((N-H_2 Vac) X (H_2 amps) X .7 / 1000) = Kw.
    c. For 208Vac output
        i. (H_1-H_2 Vac) X (H_1 amps) X .7 /1000 = KW
20. Observe the Display and ensure no anomalies or alarms are displayed.
21. DO NOT PROCEED IF THE LOAD ON THE SYSTEM IS GREATER THEN UNIT CAPABILITY.
22. Turn off the Battery Breaker (CB2) and the input Breaker (CB1)
23. Rotate the bypass switch to the UPS/AUTO position.
24. Turn on the Battery Breaker (CB2)
25. Turn on the Input Breaker (CB1)
26. Press the center and right buttons on the display at the same time till the inverter beeps, and then release the buttons.
27. Wait for the Display to display that the inverter is on line and the unit is not in bypass.
28. Verify the output voltages and current on the output of the unit are as per the system Label and record in the table below. See Table #4 for Voltage limits. Current limits are the same as calculated in step #18.

	Output Voltage and Current						
	CB1 ON, CB2 ON, CB3 ON						
	208Vac or 120/240Vac				120Vac, or 277Vac		
	G-N	N-H(1)	N-H(2)	H-H	G-N	N-H	G-H
Actual Voltage							
	G Amps	N Amps	H(1) Amps	H(2) Amps			
Actual Current							

29. Measure the DC Volts @ Bottom of the DC Breaker for proper Battery Float voltage and record in the table below. See Table #4 for limits.

	Battery Voltage
	CB1 ON, CB2 ON, CB3 ON
Actual	

30. Turn off / Open the Input Circuit Breaker.
31. Verify the Display indicates that the inverter is running on the batteries.

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32. Measure the output voltages and ensure they are as per the systems label, and then record the output voltages in the table below. See Table #3C for Voltage limits, current limits are as calculated in step #18.

	Output Voltage and Current						
	CB1 ON, CB2 ON, CB3 ON						
	208Vac or 120/240Vac				120Vac, or 277Vac		
	G-N	N-H(1)	N-H(2)	H-H	G-N	N-H	G-H
Actual Voltage							
	G Amps	N Amps	H(1) Amps	H(2) Amps			
Actual Current							

33. After about 2 or 3 minutes of running on the batteries turn on / Close the Input Circuit Breaker.
34. Verify that after a short time the display its indication from bypass to normal inverter mode
35. Measure the input current at the input breaker ensuring the current does not exceed the breaker rating, and then record the current in the table below.

	Input Current			
	CB1 ON, CB2 ON, CB3 ON			
	G Amps	N Amps	H(1) Amps	H(2) Amps
Actual Current				

36. Measure the input voltage at the input terminal blocks ensuring that they are still as per the system label, and then record in the table below. See Table #1 for limits.

	Input Voltage					
	CB1 ON, CB2 ON, CB3 ON					
	208Vac or 240Vac			120Vac, or 277Vac		
	G-H(1)	G-H(2)	H-H	G-N	N-H	G-H
Actual						

37. Complete.

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Table #1

Input Vac									
	G-N	G-H_1		G-H_2		N-H_1		H_1-H_2	
	Max	Min	Max	Min	Max	Min	Max	Min	Max
120Vac	2	114	126			114	126		
208Vac		114	126	114	126			198	218
240Vac		114	126	114	126			228	252
277Vac	2	264	290			264	290		

Table #2

Number of Batteries	4	6	8	10	18	20	22	44	45	46
Min. Voltage	46	69	92	115	207	230	253	506	518	529
Max Voltage	53	80	106	132	238	264	291	581	594	607

Table #3A

Output Vac, (Bypass)											
Input Voltage of 120Vac and 277Vac											
	G-N	G-H_1		G-H_2		N-H_1		N-H_2		H_1-H_2	
Output	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
120Vac	2	114	126			114	126	114	126		
208Vac		99	109	99	109					198	218
240Vac		114	126	114	126	114	126	114	126	228	252
277Vac	2	263	291			263	291				
120/277Vac	2	114	126	263	291	114	126	263	291		

Table #3B

Output Vac (Bypass)											
Input Voltage of 208Vac											
	G-N	G-H_1		G-H_2		N-H_1		N-H_2		H_1-H_2	
Output	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
120Vac	2	102	113			102	113	102	113		
208Vac		89	99	89	99					179	197
240Vac		102	113	102	113	102	113	102	113	206	227
277Vac	2	238	263			238	263				
120/277Vac	2	102	113	238	263	102	113	238	262		

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Table #3C

Output Vac (Bypass)											
Input Voltage of 240Vac											
	G-N	$G-H_1$		$G-H_2$		$N-H_1$		$N-H_2$		H_1-H_2	
Output	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
120Vac	2	118	131			118	131	118	131		
208Vac		103	114	103	114					206	227
240Vac		118	131	118	131	118	131	118	131	238	263
277Vac	2	275	303			275	303				
120/277Vac	2	118	131	238	263	118	131	238	262		

Table #4

Number of Batteries	4	6	8	10	18	20	22	44	45	46
Float Voltage	52.8	79.2	105.6	132	237.6	264	290.4	580.8	594	607.2
Minimum	52.4	78.6	104.8	131	235.8	262	288.2	576.4	589.5	602.6
Maximum	55.2	82.8	110.4	138	248.4	276	303.6	607.2	621	634.8

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