

18. Open the enclosure box and locate the PLC and the input/output lights is the “X5” input light lit?
- YES - 19
 - NO – Check the Up Limit Switch so that the circuit is closed
19. Engage the wireless remote, while pressing the “UP” pushbutton does the inputs “X1” and/or “X3” light up on the PLC?
- YES – 20
 - NO – Check the wiring from the “NO” circuit of **relay 3** of the wireless receiver to the PLC
20. Engage the wired control pendant, while pressing the “UP” pushbutton on the control pendant, does the inputs “X1” and/or “X3” light up on the PLC?
- YES – 21
 - NO – Check the wiring from the “UP” button of the control pendant to the PLC
21. While pressing the “UP” pushbutton does the output “Y0” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “RUN” position and/or bad PLC
22. Engage the wireless remote, while pressing the “DOWN” pushbutton does the inputs “X2” and/or “X3” light up on the PLC?
- YES – 23
 - NO – Check the wiring from the “NO” circuit of **relay 2** of the wireless receiver to the PLC
23. Engage the wired control pendant, while pressing the “DOWN” pushbutton on the control pendant, does the inputs “X2” and/or “X4” light up on the PLC?
- YES – 24
 - NO – Check the wiring from the “DOWN” button of the control pendant to the PLC



24. While pressing the “**DOWN**” pushbutton does the output “**Y1**” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position and/or bad PLC
25. Engage the wireless remote, while pressing the bottom “**UP**” pushbutton, does the inputs “**X1**” and “**X3**” light up on the PLC?
- YES – 26
 - NO – Check the wiring from the “**NO**” circuit of **relay 4** of the wireless receiver to the PLC
26. Engage the wired control pendant, while pressing the “**UP**” pushbutton fully to the **2nd** position; does the input “**X1**” light up on the PLC?
- YES – 27
 - NO – Check the wiring from the “**UP**” button of the control pendant to the PLC
27. While pressing the “**UP**” pushbutton fully to the **2nd** position, does the output “**Y3**” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position and/or bad PLC
28. Engage the wireless remote, while pressing the bottom “**DOWN**” pushbutton, does the input “**X1**” light up on the PLC?
- YES – 29
 - NO – Check the wiring from the “**NO**” circuit of **relay 4** of the wireless receiver to the PLC
29. Engage the wired control pendant, while pressing the “**DOWN**” pushbutton fully to the **2nd** position; does the input “**X2**” light up on the PLC?
- YES – 30
 - NO – Check the wiring from the “**DOWN**” button of the control pendant to the PLC



30. While pressing the “**DOWN**” pushbutton fully to the **2nd** position, does the output “**Y3**” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position and/or bad PLC
31. Engage the wireless remote, while pressing the top “**UP**” pushbutton does only the input “**X3**” light up on the PLC
- YES – 32
 - NO – Check the wiring from the “**NO**” circuit of **relay 3** of the wireless receiver to the PLC
32. Engage the wired control pendant, while pressing the “**UP**” pushbutton only to the **1st** position on the control pendant, does only the input “**X3**” light up on the PLC?
- YES – 33
 - NO – Check the wiring from the “**UP**” button of the control pendant to the PLC
33. While pressing the “**UP**” pushbutton does the output “**Y2**” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position and/or bad PLC
34. Engage the wireless remote, while pressing the top “**DOWN**” pushbutton does only the input “**X4**” light up on the PLC
- YES – 35
 - NO – Check the wiring from the “**NO**” circuit of **relay 2** of the wireless receiver to the PLC
35. Engage the wired control pendant, while pressing the “**DOWN**” pushbutton only to the **1st** position on the control pendant, does only the input “**X4**” light up on the PLC?
- YES – 36
 - NO – Check the wiring from the “**UP**” button of the control pendant to the PLC



36. While pressing the “**DOWN**” pushbutton does the output “**Y2**” light up on the PLC?
- YES – Check connections from the PLC to the VFD
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position and/or bad PLC
37. Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?
- YES – 38
 - NO – Correct the supply power and/or the supply cable
38. Follow the “Portable Hoist Brake Replacement and Adjustment Procedure”
39. Adjust the Motor Brake Tension. Does the hoist hold the load and operate correctly?
- YES – Place unit back into service
 - NO - 38
40. Check all cable connections; that the control box is connected to motor, the cord pendant is connected to the control box, and the power cord is plugged into power. Is everything connected?
- YES – 41
 - NO – Repair connections
41. Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?
- YES – 42
 - NO – Correct the supply power and/or the supply cable
42. Is the VFD powered up?
- YES – 44
 - NO – 43



43. With a multi-meter set to AC voltage, check the supply voltage at terminals “L2/S” and “L3/T” for a single phase configuration or present at terminals “L1/R”, “L2/S”, and “L3/T” for a three phase configuration. Is the supply power present at the VFD?
- YES – Damaged drive
 - NO – Check the wiring and connections feeding the VFD
44. Is the PLC powered up?
- YES – 50
 - NO – 45
45. With a multi-meter set to AC voltage, check the control power on the secondary side of the control transformer (TR3) at terminals “6” and “10”. Is the control power present?
- YES – 48
 - NO – 46
46. With a multi-meter set to AC voltage, check the supply power on the primary side of the control transformer (TR3) at terminals “1” and “5”. Is supply power present?
- YES – Bad transformer
 - NO – 47
47. With a multi-meter set to continuity (Ω), check the two(2) inline fuses on the primary side of the control transformer (TR3). Are the fuses good?
- YES – Check supply power wiring and connections feeding the control transformer (TR3)
 - NO – Replace fuses
48. With a multi-meter set to continuity (Ω), check the one(1) inline fuse on the secondary side of the control transformer (TR3). Is the fuse good?
- YES – 49
 - NO – Replace fuse



49. With a multi-meter set to AC voltage, check the control voltage at terminals “L” and “N” on the PLC. Is the control voltage present?
- YES – Check the plug of the PLC and/or bad PLC
 - NO – Check the wiring from the control transformer (TR3) to the PLC
50. Locate the PLC input/output lights is the “X0” light lit?
- YES – 61
 - NO – 51
51. Is the unit a Standard (Wired) or Wireless VFD system?
- STANDARD – 52
 - WIRELESS – 55
52. Check that the “STOP” button is pulled out on the control pendant. Is the “STOP” button pulled out?
- YES – 54
 - NO – 53
53. Check the PLC for the “X0” light. Is the “X0” light lit?
- YES – 61
 - NO – 54
54. Using a multi-meter set to AC voltage, check the control voltage between the PLC terminals “L” and “X0”. Is the control voltage present?
- YES – Check the input plug of the PLC
 - NO – Check the wiring from the PLC to the control pendant “STOP” button
55. Open the yellow cover of the wireless receiver and locate terminals “21” and “23”, this is the Power Regulator Board, locate the Power LED on the Power Board. Is the LED lit?
- YES – 57
 - NO – 56



56. With a multi-meter set to AC voltage, check the control voltage between terminals “**21**” and “**23**” on the Power Board. Is the control voltage present?
- YES – Contact BetaMax Technical Support concerning the wireless receiver
 - NO – Check the control power wiring from the PLC to the wireless receiver
57. Turn **ON** and engage **ONLY** one(1) of the wireless remotes by pressing the “**ON/START**” button twice. Is the green light on the remote present?
- YES – 58
 - NO – Check the three(3) AAA batteries of the remote and ensure that you are within transmitting range
58. Check that the “**STOP**” button is pulled out on the wired control pendant. Is the “**STOP**” button pulled out?
- YES – 60
 - NO – 59
59. Check the PLC for the “**X0**” light. Is the “**X0**” light lit?
- YES – 61
 - NO – 60
60. Using a multi-meter set to AC voltage, check the control voltage between the PLC terminals “**L**” and “**X0**”. Is the control voltage present?
- YES – Check the input plug of the PLC
 - NO – Check the wiring from the PLC through the wireless receiver relay 1 and the wired control pendant “**STOP**” button
61. Is the output “**Y5**” light lit?
- YES – Check the plug of the PLC and/or bad PLC
 - NO – 62
62. Press one of the directional operations of the unit did an input “**X**” and an output “**Y**” light up?
- YES – Check the wiring of the PLC “**C2**” and “**C3**” terminals to the VFD “**CM**” terminal
 - NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the “**RUN**” position