JOHNSON®	Troubleshooting Guide: Master Error Code List	
Document Number: NB-1903010	Date Prepared: 3/15/16	Models Affected: • Matrix: All • Vision: R60-03, R70/-02, S60/-03, S70/-02/-03, U60-03, U70/-02, T600/E, SUR-600E • Massage Chair: Basic Fit J6950 (05XX codes only)
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DESCRIPTION

The following tables include all possible console error codes. Troubleshooting is provided where known. If you have verified troubleshooting steps to add, please email contentmanagement@johnsonfit.com.

A NOTE ON CLASS A AND B ERROR CODES

Some errors can be bypassed in Engineering Mode in order to keep the machine in use.

- "Ignore B Level Errors" will bypass class A and B error codes.
- "Ignore Incline Errors" will bypass all incline errors.

ERROR CODE TROUBLESHOOTING TABLE

The two troubleshooting columns provide troubleshooting steps and suggested parts replacement. In some cases, Level 1 and Level 2 troubleshooting is the same; where applicable, Level 2 provides additional, advanced troubleshooting that can be done with a technician in the field.

*****If directed to replace UCB but unable to, discuss with Team Lead. Console replacement may be justified.*****

Speed Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0040	No speed response of roller	B	a. Replace speed sensor	
0041	After setting speed on console, speed cannot reach the target in 60 seconds (Speed too low)	B	a. Run Auto Calibration b. Replace speed sensor	
0042	After setting speed on console, speed cannot reach the target in 60 seconds (Speed too high)	B	a. Run Auto Calibration b. Replace speed sensor	
0043	RPM read from RS232 does not match RPM measured from the speed/RPM line – only used for AC motors (DCI)	B	Go into ENG mode. Find RPM parameter on the display. Press Enter, display should show the parameter value to get the unit to 1mph and the belt should start. If the parameter value is 0, replace the UCB. If the belt doesn't start, replace the MCB with a Delta MCB.	
0044	Actual speed is higher than commanded speed by limit and is accelerating (DCI)	B	Press and hold INCLINE DOWN and SPEED DOWN at the same time for 3-5 seconds. The display should now read Manager Mode. Press any UP arrow key to go to Engineering Mode and press ENTER. Press any UP or DOWN arrow key until RPM Parameter is showing on the display. Press the ENTER key, the display should now show the Parameter number to get the unit to 1.0 MPH / 1.6 KPH and the belt should start. If the belt does not start, replace the MCB. If the Parameter does not show a value, replace the UCB.	
0045	Automation speed up and speed down mode fail	B	DCI system: a. Replace the speed sensor Delta system: a. Replace the Delta MCB	
00A0	Failure to rectify speeds	C	DCI system: a. Replace the speed sensor Delta system: a. Replace the Delta MCB	
00A1	No response of motor speed sensor (keep time for LCB default)	C	DCI system: a. Replace the speed sensor Delta system: a. Replace the Delta MCB	

Motor Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0140	Incline motor failure (FTM501 – Delta board, TREADMILL) Incline motor failure (ASCENT)	B	a. Run Auto Calibration. b. Replace the incline motor	Check the connection of the incline motor cable at the MCB. Run auto-calibration. If okay, you are done. If error, replace incline motor.
0141	Main motor over temperature	B	a. Check the connection of the motor cable at the MCB. b. Replace the MCB	Check the connection of the motor cable at the MCB. Using a multimeter set to ohms, place both terminals on the blue wires of the motor cable. There should be a reading of 0. If there is a reading above 0, replace the motor. If the reading is 0, replace the MCB.
0142	The potentiometer is reversed - Incline up moves down the incline motor down (FTM501 – Delta board, TREADMILL)	B	a. Please run Auto Calibration. b. Replace the incline motor	Run auto-calibration. If it fails, check to see if there is a number displayed for elevation minimum in engineering mode. Check MCB LEDs. If LED down has no light, check the connections. Replace UCB or cable as needed. If LED down is lit, replace the incline motor. If new incline motor still fails, replace MCB.
0143	Driver disconnect	B	a. Check the connection of the motor cable at the MCB.	
0144	Motor overloading	B	1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt. 5. Replace MCB.	
0145	In the self-powered system, the incline stops when LCB battery is too low and RPM is not high enough (under 70 RPMs)	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code Plug in the machine to charge battery for 24 hours.	Replace LCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0146	TREADMILL: Motor the current exception BIKE: The second incline motor operation fails	B	TM: 1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt. Bike: a. Please run Auto Calibration. b. Replace the incline motor.	
0147	Incline motor disconnected (FTM501 – Delta board, TREADMILL)	B	AT: a. Please check the incline motor wire connection between the incline and LCB. b. Replace the incline motor TM: a. Please check the incline motor wire connection between the incline and MCB. b. Replace the incline motor	Run auto calibration. Check incline motor connection at LCB. Check to see if incline value changes on display when up/down keys are pressed. If they don't change, replace incline motor. If they do change, replace LCB.
0148	Incline motor over current	B	Disconnect the incline motor tube from the frame. Turn on the power. - If the console still shows 0148, please replace incline motor. If auto calibration is finished, please follow the incline motor installation SOP to fix incline motor.	Run auto calibration. Disconnect the incline tube from the frame. Turn on power. If console still shows error, replace incline motor. If no error, reattach incline motor and replace LCB.
0149	Resistance is over 3.7 amps	B	Replace the power resistance	Check resistance amperage through generator cable. If resistance is under 10 ohms, replace generator. If over 10 ohms, replace LCB.
014A	LCB charge current is abnormal	B	Replace LCB.	
014B	The second incline motor is disconnected or no VR signal	B	a. Check the connection of the incline motor cable at the LCB. b. Replace the incline motor	
014C	The second incline motor over current	B	Don't fix the incline motor tube. Turn on the power. - If the console still shows 014C, please replace incline motor.	

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
			If auto calibration is finished, please follow the incline motor installation SOP to fix incline motor.	
014D	The operation fails and the current is none for the incline motor (ASCENT)	B	a. Please run Auto Calibration. b. Replace the incline motor	
	The operation fails and the current is none for the incline motor (VISION ELLIPTICALS)		Replace the incline motor and LCB.	
014E	The operation fails and the current is none for the second incline motor	B	a. Please run Auto Calibration. Replace the incline motor	
01A0	See Error 0147	-	AT: a. Please check the incline motor wire connection between the incline and LCB. b. Replace the incline motor TM: *CTM501D only*—Cycle power. The message should clear. (This issue will reoccur each time the unit is auto calibrated.) *All other models—* a. Please check the incline motor wire connection between the incline and MCB. b. Replace the incline motor	See Error 0147
01A1	Incline calibration error	C	a. Please run Auto Calibration. b. Replace the incline motor.	Run auto calibration. Disconnect the incline tube from the frame. Turn on power. If console still
01A2	See Error 0142	-	a. Please run Auto Calibration. b. Replace the incline motor	See Error 0142
01A3	Main motor disconnected. (FTM501 – Delta board, TREADMILL)	C	a. Intermittent 01A3 error, please disconnect Motor wire to MCB and make sure connector is tight. b. Continuous 01A3 error, please make sure Motor wire to MCB connector is tight.	Check the connection of the motor cable at the MCB. MCB LED DSP1 should be slowly blinking in a normal state. If blinking fast or it is solid, replace motor.
01A4	Main motor U phase disconnection	C	a. Intermittent 01A4 error, please disconnect Motor wire to MCB and make sure connector is tight. b. Continuous 01A4 error, please make sure Motor	Check the connection between motor cable and MCB. Replace the motor necessary.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
			wire to MCB connector is tight. If also can't fixed issue replace the motor set	
01A5	Main motor V phase disconnection	C	a. Intermittent 01A5 error, please disconnect Motor wire to MCB and make sure connector is tight. b. Continuous 01A5 error, please make sure Motor wire to MCB connector is tight. If also can't fixed issue replace the motor set	Check the connection between motor cable and MCB. Replace the motor necessary.
01A6	Main motor W phase disconnection	C	a. Intermittent 01A6 error, please disconnect Motor wire to MCB and make sure connector is tight. b. Continuous 01A6 error, please make sure Motor wire to MCB connector is tight. If also can't fixed issue replace the motor set	Check the connection between motor cable and MCB. Replace the motor necessary.
01A7	See Error 0148	-	Don't fix the incline motor tube then turn on the power. - If the console still shows 0148, please replace incline motor. - If auto calibration is finished, please follow the incline motor installation SOP to fix incline motor.	See Error 0148
01A8	Motor over current (FTM501 – Delta board, TREADMILL)	C	1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
01AB	Inverter Error	C	a. Replace the MCB	When display is showing the error, the MCB fault LED should be lit. If LED is not lit, replace UCB. If lit, replace MCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
01AC	ECB is over current (CLIMBMILL)	-	a. Replace the Electromagnet (ECB)	Check the connection of the ECB extension cable from the LCB to the ECB (Green, white and red wire). After checking connections, check pins 1 and 3 on ECB1 and pins 2 and 4 on ECB 2; should be between 12.8 and 14.2 ohms. If out of range, replace ECB. If within range, replace LCB. Check the gap between the ECB and the flywheel. The gap should be .5 mm; adjust as needed.
01AC	ECB is over current (BIKE)	-	a. Replace the Electromagnet (ECB)	
01AD	Inner electron (motor) over temperature: motor over loading (TREADMILL)	C	1. Perform an initial friction test (see Deck Friction Testing under, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
01AE	See Error 014A	-	Replace the LCB	See Error 014A

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
01AF	1. Power resistor is disconnected 2. ECB is disconnected (CLIMBMILL)	C	HUR bike: a. Upgrade LCB software to S012 can solve this issue. b. If LCB software version is S012, Replace the Electromagnet (ECB) AT / C: a. Replace the Electromagnet (ECB)	1. Check the connection of the resistor at LCB. Replace LCB. 2. Check the connection of the ECB extension cable from the LCB to the ECB (Green, white and red wire). Check to see if LED8 and LED10 on the LCB have a brief light for 3 seconds when you power on machine (or for CS29/CS30, during workout). If LED 8 and 10 do not have brief light, replace LCB. If LED 8 and 10 do have a brief light, check the ECB extension cable at the LCB (pins 1 and 3 for ECB 1; pins 2 and 4 for ECB 3. The reading should be between 12.8 and 14.2 ohms.) If resistance is out of range, replace ECB. If it's within range, replace LCB. Check the gap between the ECB and the flywheel. The gap should be .5 mm; adjust as needed.
01B0	See Error 014B	-	a. Check the connection of the incline motor cable at the LCB. b. Replace the incline motor	See Error 014B
01B1	See Error 014C	-	Don't fix the incline motor tube then turn on the power. - If the console still shows 014C, please replace incline motor. - If auto calibration is finished, please follow the incline motor installation SOP to fix incline motor.	See Error 014C
01B2	See Error 014D	C	a. Please run Auto Calibration. b. Replace the incline motor	See Error 014D

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
01B3	See Error 014E	-	a. Please run Auto Calibration. b. Replace the incline motor	See Error 014E
01B4	Battery connection reversed	C	a. Check the battery wire connection between the battery and LCB. b. Replace the battery	Check wire connections on battery terminals. Should be black to black, red to red. Replace the LCB.
01B5	Console Sent Incline Command to Frame: 1. No Movement detected by the MCB for more than 5 seconds 2. Incline traveled in the wrong directing for more than 3 seconds 3. Incline position is out of range for more than 4 seconds	A	1. Confirm Incline Motor connections are secure 2. Perform Auto Calibration 3. Consider Replacing Incline Motor (Code added for new drive system for TM548)	
227	Auto-calibration failure – console also displays “LOW” (FTM522)	-		Upgrade console software to current version.

LCB Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0201	LCB battery low voltage	A	Plug in the machine to charge battery for 24 hours.	
0240	Low AC power input voltage	B	a. Intermittent 0240 error, please check if the input power is normal (110V: over 140V / 220V: over 280V). 1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
0241	Low DC bus voltage of drive motor	B	TBD	

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0242	MCB/LCB over temperature	B	TBD	1. Remove MCB/LCB cover and remove/clean dust from MCB/LCB cooling fan. 2. Check that MCB/LCB fan operates during workout phase. 3. Vacuum entire motor bay to ensure good airflow.
0243	Soft start circuit of DC bus fail	B	TBD	
0244	ECB sensor fail	B	TBD	
0245	ECB calibration fail	B	TBD	
0246	ECB over current	B	TBD	
0247	LCB fail	B	a. Replace LCB	
0248	Battery disconnection or fail (Low battery: LCB battery voltage is less than 6 volts)	B	a. Check battery wire connection to LCB. b. Replace the battery	Check battery wire connection to LCB. Check battery voltage; if less than 6 volts, replace battery. If not less than 6 volts, replace LCB.
0249	LCB fan failure	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code.	Check the connection of the fan cable at both ends and perform continuity test. Replace fan.
024A	Safety switch error (Cannot receive any data for over 5 seconds)	B	a. Replace the transmission board	Check the safety switch communications wire.
024B	Location sensor does not respond; RPM is not 0.	B	a. Replace proximity sensor	Check the connection of the position sensor cable from the LCB to the position sensor. Turn off the DC brake by moving the red handle downward. Rotate the stairs a least 1 complete revolution. Confirm the gap is lower than 3.5mm between the axle and proximity sensor and does not hit. Check to see if LED D8 (LED18 on CS29/CS30) on the LCB is flashing when press “Go” and rotate the stairs. - If not, replace the proximity sensor. - If yes, replace the LCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
024C	Temperature sensor abnormal	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code.	
024D	Control zone is touched for over 60 seconds (Frame IR Sensor Error for new small board)	B	a. Check for object in the control zone. Check the power of transmitter board (LED should be solid green). b. Check whether any object is blocking the IR sensor signal transmission.	
024E	Frame IR sensor is touched for over 60 seconds (E-Stop Control Zone Error for 3 IR Sensor Control Zone)	B	a. Check for object in the control zone. Check the power of transmitter board (LED should be solid green). b. Check whether any object is blocking the IR sensor signal transmission.	
0250	The 2nd speed sensor (on the frame near sprocket set) has no response. (RETAIL CLIMBMILL)	B	a. Check the speed extend wire connection between the brake and LCB for any damage. b. Check to see if the LED21 on the LCB is flashing when the unit - If it is not, replace the second speed sensor (near the sprocket set). c. If it is, adjust the second speed sensor position and clean the speed sensor of any debris then re-test or replace LCB.	
029F	An error created by DCI motor controller (AC motors only)	B	d. Cycle power. Manually move the running belt. As it moves, MCB speed LED should flash. If not, replace speed sensor. If LED flashes with belt movement, replace console cable.	
02A0	Main motor failure. Belt doesn't move when it's supposed to move.	C	a. Check the motor wire connection between the motor and MCB. b. For treadmills with AC motors, check the motor by probing motor's connector as shown in Testing with a Multi-Meter (NB-1909009). c. Press the start key and check the MCB PWM LED. If LED does not flash, replace UCB. d. If it flashes, use a multimeter and check the 3 points (U/V/W) and see if there's a resistance reading. If yes, replace MCB.	
	Encoder error. Unit is in pause mode at all times. (CLIMBMILL)	-	a. Check the connection of the speed sensor cable from the LCB to the speed sensor. b. Replace the speed sensor	Check the connection of the speed sensor cable from LCB to speed sensor. Check to see if LED D35 (LED 19 on CS29/CS30) on the LCB is on when the brake is turned to the release position. If D35/19 is off, move the stairs and check to see if LED D35/19 is flashing. If not flashing, replace speed sensor. If flashing, clean and adjust speed sensor as needed and retest.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
	Speed commanded but no belt movement detected (DCI only)	-	a. Check the connection of the speed sensor cable from the LCB to the speed sensor. b. Replace the speed sensor	1. Check the connection of the speed sensor cable to the MCB. 2. Move the running belt with your hand. As it moves, the MCB Speed LED should flash. a. If it doesn't, replace speed sensor. b. If LED is flashing with belt movement, replace console cable. 3. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 4. Check to ensure the belt is on a dedicated circuit. 5. Check for proper belt tension. 6. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. a. If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt. 7. If the problem persists, replace MCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
02A1	Over AC power input voltage	C	Using multimeter, check that the input power matches the local power specs at MCB. Change to a different outlet if necessary.	
02A2	Over DC bus voltage	C	1. Intermittent 02A2 error, please check if the input power is normal (110V: over 140V / 220V: over 280V). 2. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 3. Check to ensure the belt is on a dedicated circuit. 4. Check for proper belt tension. 5. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt. 6. *CTM707 console only* – If error displays when the emergency stop is lifted after being engaged, replace the UCB (replacement UCBs have been reworked with different emergency stop resistors).	Using multimeter, check that the input power matches the local power specs at MCB (110V: over 140V/ 220V: over 280V for 7xe/7xi models). Change to a different outlet if necessary.
02A3	Low AC power input voltage when motor running	C	1. Intermittent 02A3 error, please check if the input power is normal (110V: over 140V / 220V: over 280V). 2. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 3. Check to ensure the belt is on a dedicated circuit. 4. Check for proper belt tension. 5. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take.	Check if the input power is normal (110V: low 76V / 220V: low 186V).

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
			• If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
02A4	U phase current sensor and circuit fail	C	a. Please check the Motor wire connection between the Motor and MCB.	TBD
02A5	V phase current sensor and circuit fail	C	a. Please check the Motor wire connection between the Motor and MCB.	TBD
02A6	W phase current sensor and circuit fail	C	a. Please check the Motor wire connection between the Motor and MCB.	TBD
02A7	Motor over current	C	1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
02A8	Inverter circuit of motor failed; motor resistance is closed	C	a. Replace the motor	Check the motor wire connection between the motor and MCB. Press the start key and check the MCB PWM LED. If LED does not flash, replace UCB. If it flashes, use a multimeter to check the 3 points (U/V/W) and see if there's a resistance reading. If no, replace motor.
02AA	Main motor over limited current	C	1. Intermittent 02AA error, perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should	

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			warrant replacing the deck and belt or flipping the deck and replacing the belt.	
02AB	Machine type error	C	Change the machine type on the console to match the correct frame	
02AC	Main motor out of control (speed too high)	C	a. Replace the MCB.	
02AD	LCB/MCB over temperature	C	a. Replace the MCB.	Check MCB fan/frame fan for proper function. If fans are running, replace LCB/MCB. Check the motor wire connection between motor and MCB. Using the multimeter set to ohms, check the two blue wires for a resistance reading. If there is a reading, replace MCB. If there's no reading, replace motor.
02AE	Critical failure (DCI only MCB)	-	Cycle power. If error code persists, replace DCI MCB with Delta MCB.	
02AF	Critical failure (DCI only MCB)	-	Cycle power. If error code persists, replace DCI MCB with Delta MCB.	
02B1	Safety key action response when safety key is in place	C	Check the connection of the safety key switch. If switch is open or shorted out, replace the switch & wires. If replacement doesn't work, replace the UCB.	
02B2	Safety key action response when safety key is in place	C	Check the connection of the safety key switch. If switch is open or shorted out, replace the switch & wires. If replacement doesn't work, replace the UCB.	
02B3	Machine Type Error	C	Change the machine type in console to match frame.	
02B4	Resistance Type Error	C	a. Make sure machine type is set for the correct frame in console.	Make sure machine type is set for the correct frame in console. If yes, replace LCB, if no, change to correct type. If error persists, replace the UCB.
02B5	Inverter sensor (motor wire) is reading current over 10.5 amps for 60 seconds	C	Belted Treadmills: 1. Perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another	Belted Treadmills: Use a multimeter to check 3 points (U, V, W) to see if resistance is over 4 ohms. If yes, replace motor. If no, perform friction test (see steps 1–4 to left). If error persists, replace MCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
			friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt. Performance Plus (slat belt) Treadmills: TBD	Performance Plus (slat belt) Treadmills: Use a multimeter to check 3 points (U, V, W) to see if resistance is over 4 ohms. If yes, replace motor. If error persists, replace MCB.
02B6	Speed UP over current	C	1. Intermittent 02B6 error, perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	Visually inspect the running belt and deck for signs of wear. Perform friction test (see steps 1–4 to left). Replace belt or flip deck as needed. If error persists, replace MCB.
02B7	Speed DOWN over current	C	1. Intermittent 02B7 error, perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results	Visually inspect the running belt and deck for signs of wear. Perform friction test (see steps 1–4 to left). Replace belt or flip deck as needed. If error persists, replace MCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
			should warrant replacing the deck and belt or flipping the deck and replacing the belt.	
02B8	Running status over current	C	1. Intermittent 02B8 error, perform an initial friction test (see Deck Friction Testing, NB-1808006). Record the results. 2. Check to ensure the belt is on a dedicated circuit. 3. Check for proper belt tension. 4. If belt needs to be tensioned, perform another friction test. Record the results. Refer to the Results section in the Deck Friction Testing document to confirm what action to take. • If treadmill is on a dedicated circuit and belt tension is correct, the friction test results should warrant replacing the deck and belt or flipping the deck and replacing the belt.	Visually inspect the running belt and deck for signs of wear. Perform friction test (see steps 1–4 to left). Replace belt or flip deck as needed. If error persists, replace MCB.
02B9	The inner memory IC data write error (Delta)	C	a. Replace the MCB	Check LED DSP1 on MCB. If LED is blinking, replace UCB. If LED is lit solid, replace MCB. If LED is not lit, check power to MCB. In a normal state the DSP1 LED should be slowly blinking.
02BA	The inner memory IC data read error (Delta)	C	a. Replace the MCB	Check LED DSP1 on MCB. If LED is blinking, replace UCB. If LED is lit solid, replace MCB. If LED is not lit, check power to MCB. In a normal state the DSP1 LED should be slowly blinking.
02BB	Inverter hardware interrupt error	C	a. Inspect and check all wiring for anything wired incorrectly or disconnected. b. With power turned off, unplug the fan connection from the MCB, then turn on power to see if error reappears on the console. Repeat this with each component plugged into the MCB until the error does not appear. When error does not reappear, the component that is not plugged into the MCB should be replaced.	Reboot power, if error shows again, replace the MCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
02BC	Ground connection or fuse error (Delta)	C	a. Replace the MCB	Check LED DSP1 on MCB. If LED is blinking, replace UCB. If LED is lit solid, replace MCB. If LED is not lit, check power to MCB. In a normal state the DSP1 LED should be slowly blinking.
02BD	Inverter hardware interrupt error (Delta)	C	a. Replace the MCB	Check LED DSP1 on MCB. If LED is blinking fast, replace UCB. If LED is lit solid, replace MCB. If LED is not lit, check power to MCB. In a normal state the DSP1 LED should be slowly blinking.
02BE	DC brake error	C	a. Check to see if the stairs will move when you are in the stop position. If yes, replace the brake.	Check the power extended wire connection between the brake and the LCB for damage. Replace if necessary. Manually try to move the stairs. If the stairs move, replace brake.
02BF	DC brake over current	C	a. Replace the brake.	Check the power extended wire connection between the brake and the LCB for damage. Replace if necessary. Manually try to move the stairs. If the stairs move, replace brake.
02C0	DC brake in manual mode	C	a. Check if the DC brake is in the “Right “lock position. Release the brake (move to the left) if in lock position. Replace the brake.	Push lever on DC brake up to engage the brake. Cycle power. If error persists, replace brake.
02C1	Speed tracking error; the speed tracking is off by at least 10 RPMs for at least 20 continuous seconds	C	a. Replace the speed sensor	Adjust speed sensor position and clean free of debris. Check the ECB extension cable connection at the LCB. Check the resistance (Pins 1 and 3 for ECB1, Pins 2 and 4 for ECB2.) There should be between 12.8 and 14.2 ohms. If resistance is out of range, replace ECB. If it’s within range, replace LCB.
02C2	CZ 3IR sensors have no communication or disconnected over 3 seconds	C	a. Replace the transmission board	Check if there is something blocking CZ IR sensors. Check the connection of the CZ extension cable from LCB. If LED1 on receiver board is flashing, perform continuity test on the extension cable (white wire, pin 2) from the LCB to the receiver board. If not good, replace cable. If okay, check if LED D12 on the LCB is lit. If not lit, replace LCB. If lit, check LED1 status on the receiver board. If that LED is lit, replace the transmission board. If that LED is not lit, replace the receiver board.
02C3	Frame IR sensor error	C	a. Replace the frame IR transmitter cable	Check if there is something blocking the frame IR sensors. Check the connection from frame IR cable to the LCB. Check LED1 on the daughter board. If it is not flashing, replace daughter board. If flashing, replace frame IR cables.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
02C4	The frequency error for climbmill control zone (The signal is abnormal over ten seconds)	C	b. Replace the control zone receiver board.	Replace the control zone transmitter board or receiver board.
02C5	The frequency error for climbmill frame IR sensor (The signal is abnormal over ten seconds)	C	Replace LCB.	
02C6	The receiver is disconnected for climbmill control zone (Connector is disconnected over 3 seconds)	C	a. Check the connection of the control zone extension cable from the LCB to the control zone. Cycle power. Check error log and SN case history. If the error happened less than two times in the past year, do not send any parts. Replace the receiver board.	Check the connection of the control zone extension cable from the LCB to the control zone. Replace the receiver board or control zone extension cable or LCB.
02C7	The receiver is disconnected for climbmill frame IR sensor	C	c. Check the connection of the frame IR receiver cable from the LCB to the frame IR receiver sensor. b. Replace the frame IR receiver cable.	Check the connection of the frame IR receiver cable from the LCB to the frame IR receiver sensor. Replace the LCB set or the frame IR receiver cable.
02CD	DC brake disconnects (climbmill only)	C	a. Check the power wire connection between the brake and LCB for any damage. b. Check to see if LED16 on the LCB is on when the unit is powered on. - If it is not, replace the LCB. d. If it is, replace the brake.	a. Check the power wire connection between the brake and LCB for any damage. b. Check to see if LED16 on the LCB is on when the unit is powered on. - If it is not, replace the LCB. If it is, replace the brake.
02CE	Error Signal on ECB Board is High	A	1. Confirm ECB Board is connections are secure 2. Consider Replacing ECB Board (Code added for new drive system for TM548)	
02CF	ECB Board has detected an abnormal supply Voltage	A	1. Confirm ECB Board is connections are secure 2. Consider Replacing ECB Board (Code added for new drive system for TM548)	
02D0	Limit switch for brake has been toggled	A	1. Confirm Limit Switch connection is secure 2. Consider Replacing Limit Switch (Code added for new drive system for TM548)	
02D1	ECB Swing Arm is not moving	A	1. Confirm ECB Swing Arm can move freely 2. Consider Replacing ECB Module (Code added for new drive system for TM548)	

UCB Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0301	Memory block fail	A	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code.	Cycle power. If not resolved, check Feature Access Code document for memory clear function. If none or does not fix, replace UCB.
0302	UCB low battery voltage	A	Replace battery.	
0303	UCB low supply voltage	A	1. Enter Engineer Mode & disable Error Codes.	2. Make sure the RPM over 35, when the machine of self-power mode.
0304	Earphone Board Need Replace	A	1. Replace Earphone Board. Reset insert counter in Service Mode (if applicable). Cycle power.	
0305	USB Hardware OT or OC	A	1. Enter Engineer Mode & disable Error Codes. 2. Replace USB board & cable.	3. Replace UCB.
0306	Keypad press keep 60 seconds	A	Replace Keypad. (Note: The message on the console screen helps isolate the defective keypad. “Replace Up” means the program keypad, “Replace Lower” means the entertainment keypad, and “Replace Quick” means either the hand grip toggles or the quick start overlay on the treadmill handlebars.)	
0307	Not enough free space on the console to apply the update	A	1. Press the three buttons Volume Up, Volume Down, and Channel Down on the keypad simultaneously for 5 seconds (so that the console restores back to 1.0.2.5 version automatically). 2. Wait for the console to go back to version 1.0.2.5 (for about 6 minutes, done when 'Welcome' screen shows). 3. Proceed to update the console again (using USB flash drive or RSCU via network).	
0308	Software package install failed	A	Same as for error code 0307	
0309	Software package MD5 check failed	A	Attempt the update again. If using USB update, ensure files downloaded & transferred properly.	

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
030A	Failed to download software package	A	Check if the console can connect to network (via WiFi or Ethernet): 1. Press 'enter 3 0 0 1 enter' on the keypad to enter engineering mode. 2. Tap 'General' tab and then scroll down to the bottom to check if the DAPI environment is set to 'Production'. 3. Tap 'Network Setup' tag to check if WiFi or Ethernet network is available. 4. Tap 'Update' tag, and then tap 'Check For Update' button. 5. Wait for the busy indicator (a circling twin-arrow icon) to show on the screen. 6. When the busy indicator disappears, check if information about available update packages shows on the screen. - If so, tap 'Install' button to update the console again. - If not, then network is not available to the console at the moment. RSCU update cannot go until the Internet network is fixed. Attempt software update via USB.	
0340	Keypad in extraordinary operation	B	1. Replace Keypad	
0341	Fan over current	B	1. Replace Fan	
0343	UCB Over supply voltage	B	a. Replace the LCB	Check the LCB provide power: if it is over 13 volts, replace LCB. Otherwise replace UCB.
0344	Timeout receive packet (Not recommended for re-use, make use of 04B0 code)	B	a. Check the connection of the console cable at both ends and perform continuity test. b. Replace the UCB	
0345	Correct packet but LCB without the function	B	1. Enter Engineer Mode & disable Error Codes.	2. Replace the UCB.
0346	UCB detect incline position error	B	1. Perform Incline Auto Calibration. 2. Enter Engineer Mode & disable Error Codes.	3. Replace Incline motor
0347	VA Load program fail	B	1. Enter Engineer Mode & disable Error Codes. 2. Verify SD card mounted properly. 3. Replace VA microSD card.	Reload SD card from known good card. Check VA software (should be 2.91 version). If not, replace VA board.
0348	Motor not to run	B	1. Enter Engineer Mode & disable Error Codes.	2. Replace the UCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
03A5	Failed to load program (programs exist in the file system; this error could mean the file system is corrupt)	C	1. Ensure machine type is correct. 2. Update UCB software to latest version.	3. Replace the UCB.
03A6	Failed to run program (the program read from the file system is invalid or has an invalid format, therefore it cannot be executed)	C	1. Ensure machine type is correct. 2. Update UCB software to latest version.	3. Replace the UCB.
03A7	See Error 0347	-	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code. b. Replace VA Micro SD card	See Error 0347
03A8	Machine type error	C	1. Ensure machine type is correct. 2. Update UCB software to latest version.	3. Replace the UCB.
03A9	See Error 0348	C	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code.	See Error 0348

Communication Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0440	Timeout received packet (BIKE)	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code	Check status of LCB LED10. - If LED10 is blinking, cycle power. If there is still an error, update UCB software. If error persists, replace the console. - If LED 10 is not lit, check console cable connection at both ends. If it is securely plugged in, replace console cable. If still error, replace UCB. Then replace LCB if necessary.
0441	Correct packet but LCB/MCB without function	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code	Check the console cable connections. Update LCB software if possible. Replace LCB or UCB as necessary.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
	Command is received from the console with correct packet, but the daughter board has no function to support it (TREADMILL DCI)	-		Cycle power on unit. If the issue is not fixed, replace daughter board.
0442	Command is received from the console with correct packet, but the daughter board has no function to support it (TREADMILL DCI)	-	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code	Cycle power on unit. If the issue is not fixed, replace daughter board.
0443	LCB read or write wrong	B	a. Enter the Engineer mode disable B Level Error, bypass CLASS A and B error code	
04A0	2016 5x consoles (EP623/EP624/CS27/CS28/TM530) only	-	Upgrade to software version 8.6 or higher.	
	LCB/MCB no communication received (TREADMILL)	C	a. Check the connection of the console cable at both ends and perform continuity test. b. Replace the LCB	Delta only: If the display is showing 04A0 error, LED DSP2 should be off. If light is on, replace the UCB. Check the connection of the console cable at both ends and perform continuity test. Replace console cable. Replace MCB/LCB.
	Console communication is lost (TREADMILL DCI)	-		Check connection of console cable. If no signal is present through console cable, LED 1 on the daughter board should not be lit. Replace console cable. Replace daughter board.
	UCB communication disconnect (BIKE - Chopper)	-		Check status of LCB LED10. If blinking, cycle power. If there is still an error, update UCB software. If the error persists, replace the UCB. If LED 10 is OFF, check console cable connection at both ends. If securely connected, replace console cable. If error persists, replace UCB. Replace LCB if necessary.
	Console has no communication or is disconnected (CLIMBMILL)	-		Check console cable connections, perform continuity test on cable. Ensure console is getting 12 volts DC between pin 1 and pin 8 at console end. If not, replace console cable. If it is, replace the UCB.

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
	Windows 7xi (CTM521, EP614) only: Error occurs after updating to software version 8.0.25	-	Go to Update Manager. Using HTTP as the update source, install all available updates. After the update is finished, Service Mode > Support tab should show v10.0 for "7xi control service" software.	
04B0	Console/LCB no communication received (TREADMILL or ASCENT)	C	a. Check the connection of the console cable at both ends and perform continuity test. b. Replace the UCB	Check the console cable at both ends. Replace console cable if damaged. Swap console with known good if connections are good. Replace the UCB. Replace MCB/LCB.
	Console/LCB no communication received (BIKE - Chopper)	-		Check status of LCB LED10. If blinking, cycle power. If there is still an error, update UCB software. If that doesn't fix it, replace the UCB. If LED 10 is OFF, check console cable connection at both ends. If it is securely plugged in, replace console cable. If still error, replace UCB. Then replace LCB if necessary. If LED 7, 8, 9 and 10 are blinking together, this indicates LCB software problem. Reinstall software or replace LCB.
	No response from LCB (CLIMBMILL)	-		Check console cable connections. Perform continuity test on cable. Ensure console is getting 12 volts by touching pin 1 and pin 8 at console end. If not, replace console cable. If it is, replace the LCB.
04B1	IO board does not have communication response for 5 seconds	C	Replace UCB.	

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
04B2	Control service crashed	-	1. Attempt to export log files (on the Android 7xe or 7xi console, press ✓ **4 0 0 7** ✓ on the keypad). • If the console is frozen and does not respond, reboot the console or cycle power. • If the log files successfully download, record the site name, frame serial number, console serial number, and the approximate date and time the error code appeared. Send this information, along with the log files, to customer tech support. 2. Verify the software version. • If not current, update the console to current version. • If current, turn on persistent logging (in the Service Menu). If the error reoccurs, collect log files and record the site name, frame serial number, console serial number, and the approximate date and time the error code appeared. Send this information, along with the log files, to customer tech support.	
04B3	Machine type not recognized	-	Check the error log. If error 04B3 has occurred more than two times, follow these steps: 1. Retrieve the serial numbers from the console and frame serial number labels. 2. From the Welcome screen, press "Enter, 3002, Enter". 3. In addition to the serial numbers, the console screens will prompt you to enter language, Wi-Fi setup, machine, and date and time. 4. From the Welcome screen, press "Enter, 3001, Enter" for Service Mode. Go to TV Channel Setup and perform a channel scan.	
04B5	Invalid IO checksum	A		Upgrade console software to current version.
04B6	No communication response to UCB	A		Upgrade console software to current version.

Massage Chair Errors

Error Code	Description	Class Level	Troubleshooting – Level 1 (CTS)	Troubleshooting – Level 2 (Technician in the Field)
0510	Tapping motor has some failure that motor disconnect, out of current range, sensor broken or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check drive mechanism of tapping and consider replace this drive mechanism. 3. If the error code still appears, consider replace tapping motor or machine core. 4. If the error code still appears, consider replace wiring. 5. If the error code still appears, consider replace LCB.	
0511	Kneading motor has some failure that motor disconnect, out of current range, sensor broken or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check drive mechanism of kneading and consider replace this drive mechanism. 3. If the error code still appears, consider replace machine core. 4. If the error code still appears, consider replace wiring. 5. If the error code still appears, consider replace LCB.	
0513	Up/Down motor has some failure that motor disconnect, out of current range, sensor broken or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check up/down sensor and consider replace this sensor. 3. If the error code still appears, consider replace machine core. 4. If the error code still appears, consider replace wiring. 5. If the error code still appears, consider replace LCB.	
0515	Footrest Angle actuator has some failure that motor disconnect, out of current range, sensor broken or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check connector connected well, fix it. 3. If the error code still appears, consider replace footrest motor. 4. If the error code still appears, consider replace LCB.	
0517	Backrest Angle actuator has some failure that motor disconnect, out of current range, sensor broken or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check connector connected well, fix it. 3. If the error code still appears, consider replace backrest motor. 4. If the error code still appears, consider replace LCB.	
0520	Air pump has some failure that pump disconnect, out of current range or some other abnormal situation.	B	1. Check if the error code reappears by cycling power. 2. If the error code still appears, check connector connected well, fix it. 3. If the error code still appears, consider replace Air Pump. 4. If the error code still appears, consider replace LCB.	
0540	The LCB will happen this alert if LCB cannot receive a correct communication response for more than long time.	B	1. Check if the alert code reappears by cycling power. 2. Inspect and reconnect the communication cable to check if the alert code reappears 3. If the alert code still appears, consider replacing the LCB or the console.	
0541	The console will happen this alert if console cannot receive a correct communication response for more than long time.	B	1. Check if the alert code reappears by cycling power. 2. Inspect and reconnect the communication cable to check if the alert code reappears 3. If the alert code still appears, consider replacing the LCB or the console.	

0545	The RFID reader will happen this alert if console cannot receive a correct communication response for more than long time.	B	1. Check if the alert code reappears by cycling power. 2. Inspect and reconnect the communication cable to check if the alert code reappears 3. If the alert code still appears, consider replacing the RFID reader.
0546	The Wi-Fi module will happen this alert if console cannot receive a correct communication response for more than long time.	B	1. Check if the alert code reappears by cycling power. 2. Inspect and reconnect the communication cable to check if the alert code reappears 3. If the alert code still appears, consider replacing the Wi-Fi module.