

BIODEX MULTI-JOINT SYSTEM

ERROR CODES APPENDIX

850-000

852-000

840-000



BIODEX

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Error Codes

Code	What Happened	What to do next
0007	Torque Sensor Fault. (LED S2 turns on.) When the current to the torque sensor is not within 28.57mA +/-5% range this error will be displayed.	To verify current measure, the voltage across R41 it should be between 2.7 and 3v dc. This fault detects a shorted or open torque sensor.
0008	Encoder Fault. (LED S1 turns on.) When the current to the encoder sensor is within range: between 100 and 260mA.	To verify current, measure the voltage across R26 it should be between .1v and .26v dc. This fault detects a shorted or open encoder.
0009	Position Limit Fault (No LED's turned on.) When the encoder position exceeds the set ROM limits by 15 degrees a fault is detected.	Replace the Position ROM Pot first Check PDB and verify Buss voltage is 325 +- 20v dc, if you measure 32vdc you are operating in setup mode which is only used to establish ROM limits. If your buss voltage is above 32v but below 300 replace PDB. If the buss voltage is OK replace PWM amp. Replace the SCB if above steps fail.
0015	Position Pot Fault. (LED S3 turns on.) Fault activates during system initialization if pot is operating out of range (11.5 -.5v dc).	Check pot supply +15v dc, pot coupling and verify pot operation, resistance is 0 to 1k ohms. Adjust The Pot first and if that does not work, replace the Pot.
0017	DSP Communication Fault. (No LED's turned on.) Fault is an indication that the SCB processor (68331) is not communicating with the DSP.	Reinstall firmware and verify operation. If fault continues replace SCB.
0021	ROM Limit Fault. (No LED's turned on.) Fault indicates that the Firmware has detected the Dyna exceeded ROM limits by 5 degrees. This can occur in SETUP if excessive force is applied. This is not the proper application for the SETUP mode.	If this occurs during the active mode, the attachment may be creeping through the limit. Check the Balance of the Chopper and follow the Isotonic creep adjustment Procedure.
0022	AC Low Line Fault. (No LED's turned on.) Fault indicates that a circuit on the PDB reported a 20% drop in line voltage. A possible cause may have been a temporary drop in the line voltage.	If the Problem continues check the AC Wall voltage. Follow the Transformer tap procedure and rewire the primary of T1 and T2 with respect to the AC wall Voltage. If the problem is consistent and the line voltage is good, you may need to add a line conditioner.
0024	Excessive speed detected between the Position Pot and the Motors encoder. (No LED's turned on.)	Check all connections from the motor to the Dyna board. Take all of the backlash out of the plastic gear to which the ROM Pot is connected. If that does not work, try replacing the following parts in order, and trying the system after each one to see if the problem has been resolved. POT, SCB, Motor, Dyna board, the Signal cable, in that order.

Code	What Happened	What to do next
0028	Position Fault. (No LED's turned on.) Fault indicates firmware detects position pot is not tracking position encoder. A difference of 10 degree between them will cause fault.	Check pot. Replace the following in the order given and check the system after each to see if the problem has been resolved. Pot, Motor, Dyna board, Dyna signal cable, SCB board.
0029	The Position POT reading is out of tolerance during the Initialization. (No LED's turned on.)	It is out of range for max CW, or max CCW position.
0031	Position Fault. (No LED's turned on.) Fault indicates that during initialization the max ROM established was not within 327 -340 degrees.	Check that the attachments were removed from shaft prior to initialization; this would limit max ROM. Follow flow chart for troubleshooting error 0031 located in the troubleshooting section of the manual.
0037	Excessive torque. (No LED's turned on.) Excessive torque has been applied to shaft during initialization.	Remove the attachment or item blocking the full range of motion and try again. If the problem is still present, Replace the Dyna Board, and the Dyna complete for a possible Strain Gauge error.
0050	Amplifier Fault. (LED S10 Blinks on momentarily, OC light on PWM Illuminated.) Amplifier Fault indicates over current condition.	Check motor and cable, verify that resistance from the motor is within 1 to 2 ohm range, if OK replace PWM amp.
0051	Amplifier Over Voltage. (LED S10 Blinks on momentarily, OV light on PWM Illuminated.) PWM amp detects buss voltage exceeding 390v dc.	Probable cause Regen circuit on the PWM. Check Fuses on the PWM. If fuses are good, Replace the PWM amp. If the PWM does not fix the problem, check the motor cable for shorts, especially the portion of the cable inside the Gimbal Post.
0052	PWM Amplifier over temp. (LED S10 Blinks on momentarily, OT light on PWM Illuminated.) Fault is an indication of output current due to excessive loading or resistance.	Check cooling fan operation, if OK replace amplifier.

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