

SECTION 7

FAULT DIAGNOSIS & CORRECTIVE ACTION

Introduction

Summary of possible Fault Symptoms

Diagnosis & Corrective Action

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Introduction

This section gives a summary of possible faults symptoms and a list of possible causes & corrective action.

The actions to be performed are listed alongside the symptoms and should be carried out in sequence.

Electrical faults involving tripped circuit breakers or blown fuses should be investigated and any faults rectified before new fuses are fitted and/or circuit breakers reset.

Summary of possible Fault Symptoms

Fault Symptom	Sequence of Actions
Chair dead – Controller lamp not on	A-B-C-D-G-F
Chair dead – Controller lamp on	A-C-D-G
Chair operation intermittent – Lamp out when chair fails	A-B-C-D-E-G-F
Chair operation intermittent – Lamp on when chair fails	A-C-D-F-K-N-P-Q
Chair operation intermittent – Lamp flashes	A-C-D-G-F
Chair speed is low – Motors not laboured	C-G-H-T-U
Chair speed is low – Motors laboured	A-C-D-E-G-S-T
Chair has short Range/Duration	C-G-I-J-L-M
Chair drives in circles or swerves	A-D-J-K-L-N-O-P-T
Chair will not move but motors run	O-P-Q

Diagnosis & Corrective Action

The possible causes are first identified and the recommended Action then given
The list of possible causes is not in order of probability.

A	Cause Action	Controller plug/socket improperly seated Rectify, check and repair damage to plug/socket/retainer.
B	Cause Action	Thermal circuit tripped Reset Breaker. If fault persists check for short circuits, abnormal drive current of faulty circuit breaker. Note that the circuit breaker will trip if the chair is stalled at full power. Normal current 6-9 amps on level ground.
C	Cause Action	Batteries discharged Check that batteries are serviceable. Replace if found faulty. Check charger.
D	Cause Action	Harness Check for broken connections/cable
E	Cause Action	Harness Check for short circuits or faulty insulation.
F	Cause Action	Controller When all other tests have proved negative fit a suitable replacement controller with compatible socket connections.
G	Cause Action	Battery Connections Check for loose or corroded connections. Clean and tighten any found to be faulty. Smear terminals with petroleum jelly.
H	Cause Action	Controller Check that the power control dial is advanced.
I	Cause Action	Castors Check the wheels spin freely.
J	Cause Action	Castors Check the castor rotates freely in its mounting.
K	Cause Action	Electromagnetic Brakes Check the brakes operate correctly, refer to section 5.

L	Cause Action	Drive Wheels Disengage the free wheel device and check that wheels turn freely on axles and that nothing is jamming the hub.
M	Cause Action	Charger Check operation of charger. Refer to manufacturers instructions.
N	Cause Action	Motor Check brushes for wear/sticking. Intermittent failure of motor to start may indicate open circuit winding or defective commutator. If so replace motor.
O	Cause Action	Gearbox If the gearbox develops a fault the complete motor/gearbox should be replaced.
P	Cause Action	Drive Failure If pin has sheared, replace the clutch drive pin.
Q	Cause Action	Free Wheel Drive clutch device malfunction
R	Cause Action	Motor supply lead/connectors. Check for damaged insulation, broken cable or faulty connector.
S	Cause Action	Electromagnetic brake supply circuit Check for damaged insulation, broken cable or faulty connector.
T	Cause Action	Parking Brake is on Release parking brake. Dismantle and check internal braking mechanism is correctly functioning with the wheel hub.

Controller Troubleshooting

Should a fault occur with the drive/controller system, the controller will automatically cut power to the drive unit and report that a fault has occurred. How this is done depends on the controller manufacturer.

For detailed information refer to the manufacturers guides at appendix 1.