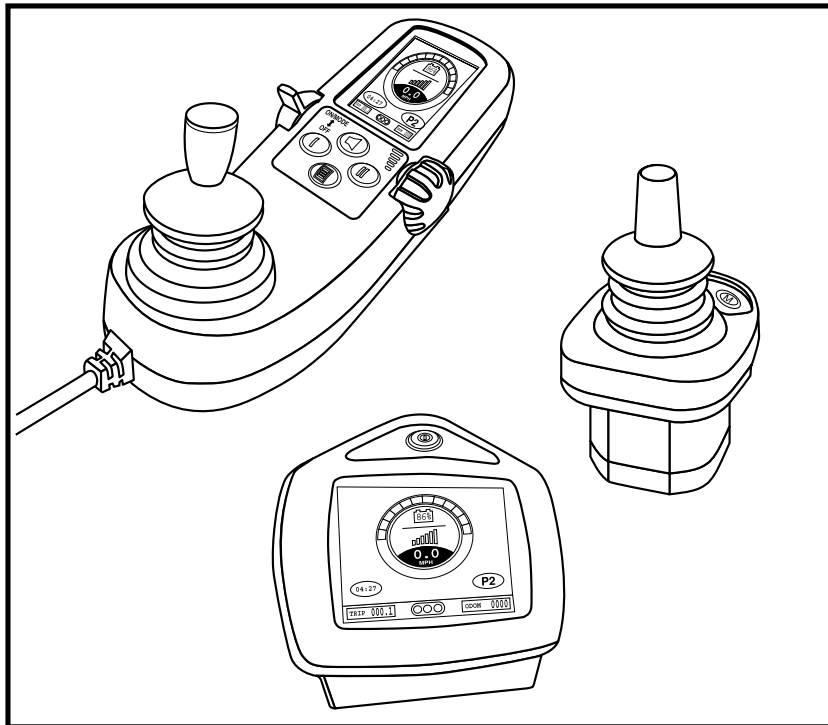


BASIC OPERATION INSTRUCTIONS

Q-Logic™ Controller

ACN# 088 609 661



QUANTUM®
REHAB
INNOVATIVE REHAB SOLUTIONS

A Division of Pride Mobility Products® Corp.

INFORMATION LABELING

The symbols below are used throughout this owner's manual and on the power chair to identify warnings and important information. It is very important for you to read them and understand them completely.



WARNING! Failure to follow designated procedures can cause either personal injury, component damage, or malfunction (black symbol on yellow triangle with black border).



MANDATORY! These actions should be performed as specified. Failure to perform mandatory actions can cause injury to personnel and/or damage to equipment (white symbol on blue dot with white border).



PROHIBITED! These actions are prohibited. These actions should not be performed at any time or in any circumstances. Performing a prohibited action can cause injury to personnel and/or damage to equipment (black symbol with red circle and red slash).



Read and follow the information in the owner's manual.



Avoid exposure to rain, snow, ice, salt, or standing water whenever possible. Maintain and store in a clean and dry condition.



Disposal and recycling - Contact your Quantum Rehab Specialist for information on proper disposal and recycling of your Pride product and its packaging.

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INTRODUCTION

WELCOME to Quantum Rehab, a division of Pride Mobility Products Corporation (Pride). The product you have purchased combines state-of-the-art components with **safety**, comfort, and styling in mind. We are confident that the design features will provide you with the conveniences you expect during your daily activities. Understanding how to **safely** operate and care for this product should bring you years of trouble free operations and service.

Read and follow all instructions, warnings, and notes in this manual and all other accompanying literature before attempting to operate this product for the first time. In addition, your **safety** depends upon you, as well as your provider, caretaker, or healthcare professional in using good judgement.

This manual is to be used in addition to the power base owner's manual that came with your power chair. If there is any information in this manual which you do not understand, or if you require additional assistance for setup or operation, please contact your Quantum Rehab Specialist. **Failure to follow the instructions, warnings, and notes in this manual and those located on your Pride product can result in personal injury and/or product damage and will void Pride's product warranty.**

PURCHASER'S AGREEMENT

By accepting delivery of this product, you promise that you will not change, alter, or modify this product or remove or render inoperable or unsafe any guards, shields, or other safety features of this product; fail, refuse, or neglect to install any retrofit kits from time to time provided by Pride to enhance or preserve the safe use of this product.

INFORMATION EXCHANGE

We want to hear your questions, comments, and suggestions about this manual. We would also like to hear about the safety and reliability of your new Pride product, and about the service you received from your Quantum Rehab Specialist. Please notify us of any change of address, so we can keep you apprised of important information about safety, new products, and new options that can increase your ability to use and enjoy your Pride product.

NOTE: If you ever lose or misplace your product registration card or your copy of this manual, contact us and we will be glad to send you a new one immediately.

My Quantum Rehab Specialist Is:

Name: _____

Address: _____

Phone Number: _____

Purchase Date: _____

Q-LOGIC CONTROLLER

The Q-Logic Controller is a fully-programmable, modular electronic controller system that allows you to operate your power chair. The Q-Logic has several input devices available which operate through a power module. The hand control will primarily be discussed in this manual, along with references to the Enhanced Display, Stand Alone Joystick, and Attendant Control. Additional input devices and programmers are also available for the Q-Logic. Contact your Quantum Rehab Specialist for more information.

NOTE: The Stand Alone Joystick and Attendant Control operate in the same manner, except that the Attendant Control will not allow the user to overtake control of the power chair from the attendant.

The controller has been pre-programmed to meet a typical user's needs. The program is set using either a personal computer with software provided by the controller manufacturer or with a hand-held programmer, also provided by the controller manufacturer.



WARNING! The controller program can affect speed, acceleration, deceleration, dynamic stability, and braking. If it is programmed incorrectly or outside of the safe limits as determined by your healthcare professional, it can create a dangerous situation. Only the power chair manufacturer, an authorized representative of the manufacturer, or a trained service technician should program the controller.

NOTE: When a power chair is equipped with multiple input devices, the device that powered up the chair will be in control. The exception to this is that the Attendant Control can override other input devices by pressing the power button and then powering up the power chair.

PRECAUTIONARY GUIDELINES

Before operating the Q-Logic controller, please read the following. These guidelines are provided for your benefit and will aid you in the safe operation of the controller system.

- Turn off the power to the controller before you are seated in your power chair.
- Follow all of the procedures and heed the warnings as explained in your power chair owner's manual.

Failure to heed the above warnings can result in personal injury and/or equipment damage.

Electromagnetic and Radio Frequency Interference (EMI/RFI)



WARNING! Laboratory tests have shown that electromagnetic and radio frequency waves can have an adverse affect on the performance of electrically-powered mobility vehicles.

Electromagnetic and Radio Frequency Interference can come from sources such as cellular phones, mobile two-way radios (such as walkie-talkies), radio stations, TV stations, amateur radio (HAM) transmitters, wireless computer links, microwave signals, paging transmitters, and medium-range mobile transceivers used by emergency vehicles. In some cases, these waves can cause unintended movement or damage to the control system. Every electrically-powered mobility vehicle has an immunity (or resistance) to EMI. The higher the immunity level, the greater the protection against EMI. This product has been tested and has passed at an immunity level of 20 V/m.

WARNING! Be aware that cell phones, two-way radios, laptops, and other types of radio transmitters may cause unintended movement of your electrically-powered mobility vehicle due to EMI. Exercise caution when using any of these items while operating your mobility vehicle and avoid coming into close proximity of radio and TV stations.



WARNING! The addition of accessories or components to the electrically-powered mobility vehicle can increase the susceptibility of the vehicle to EMI. Do not modify your power chair in any way not authorized by Pride.

WARNING! The electrically-powered mobility vehicle itself can disturb the performance of other electrical devices located nearby, such as alarm systems.

NOTE: For further information on EMI/RFI, go to the Resource Center on www.pridemobility.com. If unintended motion or brake release occurs, turn your power chair off as soon as it is safe to do so. Call Pride or your Quantum Rehab Specialist to report the incident.

Q-Logic Controller Features

Figure 1 provides information on the Q-Logic components and connections. Use this diagram to familiarize yourself with the function and location of each component before using the Q-Logic Controller.

The following functions are available with the Q-Logic Controller:

- Joystick Control
The joystick is used to control the direction and speed of the power chair.
- Actuator Adjustment
The user can control positioning of power seat actuators with the Q-Logic.
- Drive Profile Selection
The user can select one of five available drive profiles.
- Speed Adjustment
The user can control the speed of the power chair with the speed adjustment knob.
- Attendant Control
An input device is generally mounted on the back of the power chair for use by an ambulatory attendant. When the Attendant Control is switched on, it takes over control from the user's controller.
- Enhanced Display
A color LCD display that may be equipped with built-in infrared (IR) for remote control. It is available with Bluetooth and can be operated by a wide variety of input devices ranging from switches to head controls and different joysticks.
- Sleep Mode
A feature designed to shut off power if the joystick remains stationary for a preprogrammed period of time. This function is intended to preserve battery charge and can be disabled through programming.
- Thermal Rollback
A safety feature designed to prevent the power chair from overheating and causing damage to the motors or controller.

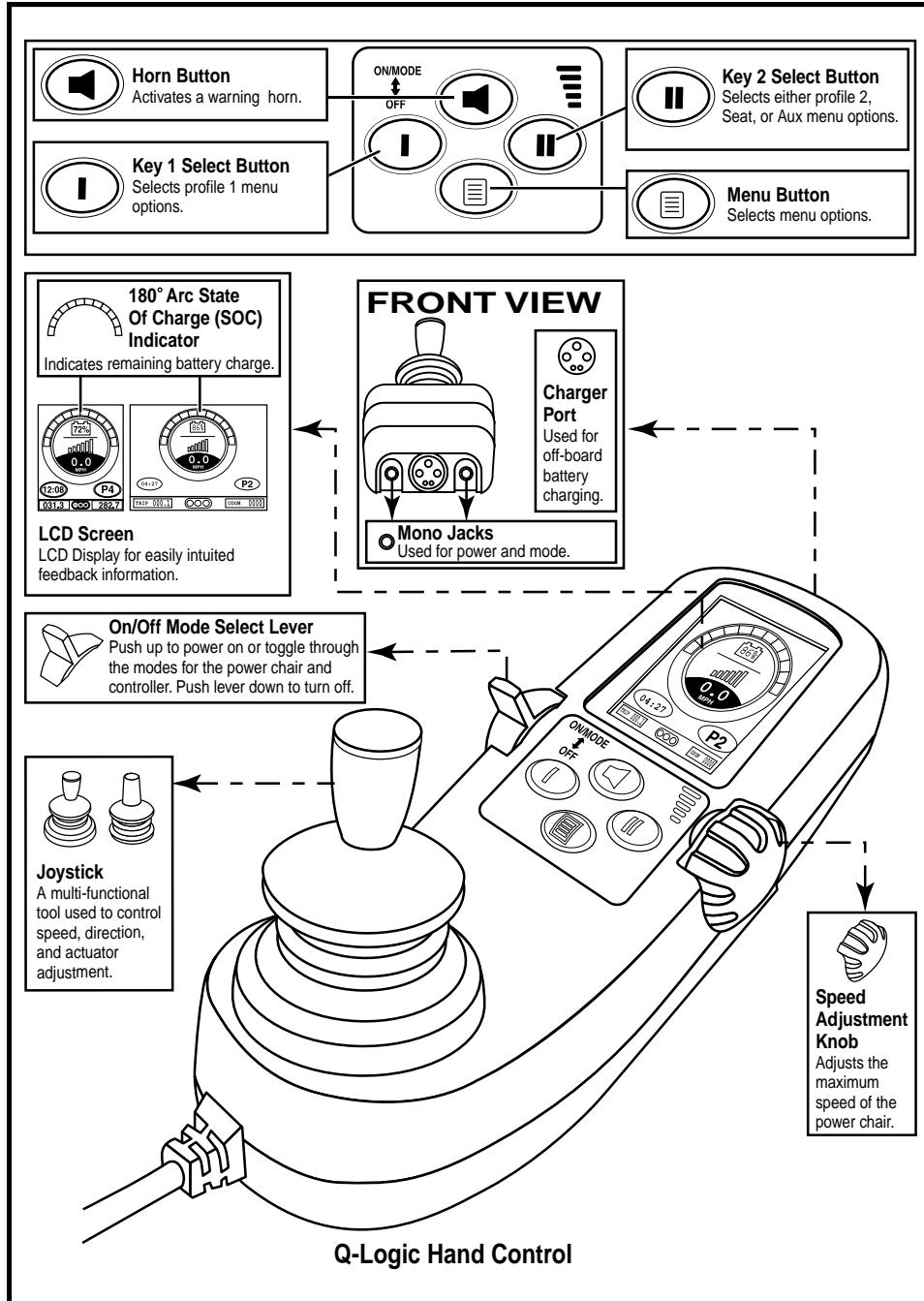


Figure 1. Q-Logic Hand Control Components and Connections

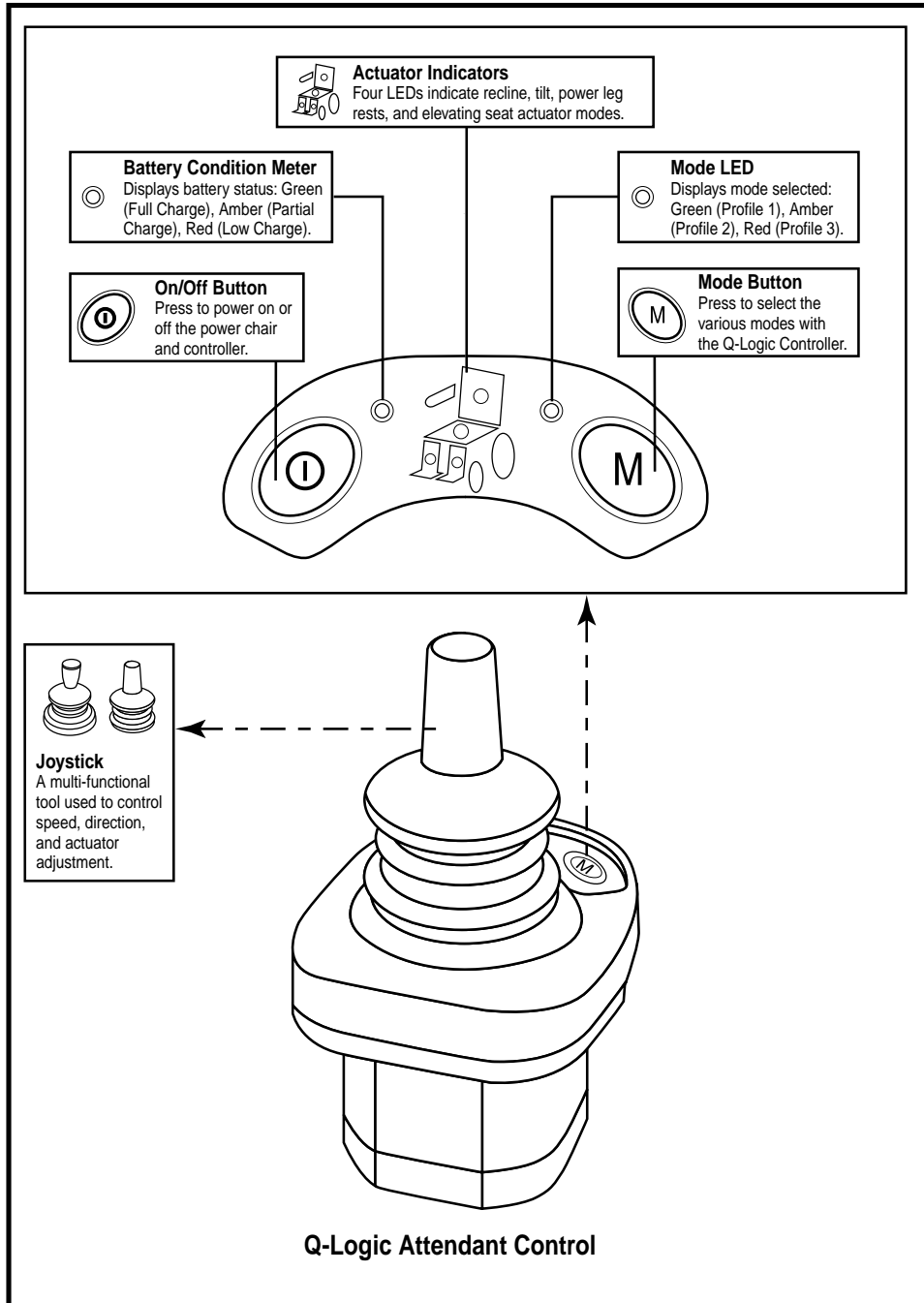


Figure 2. Q-Logic Attendant Control Components and Connections

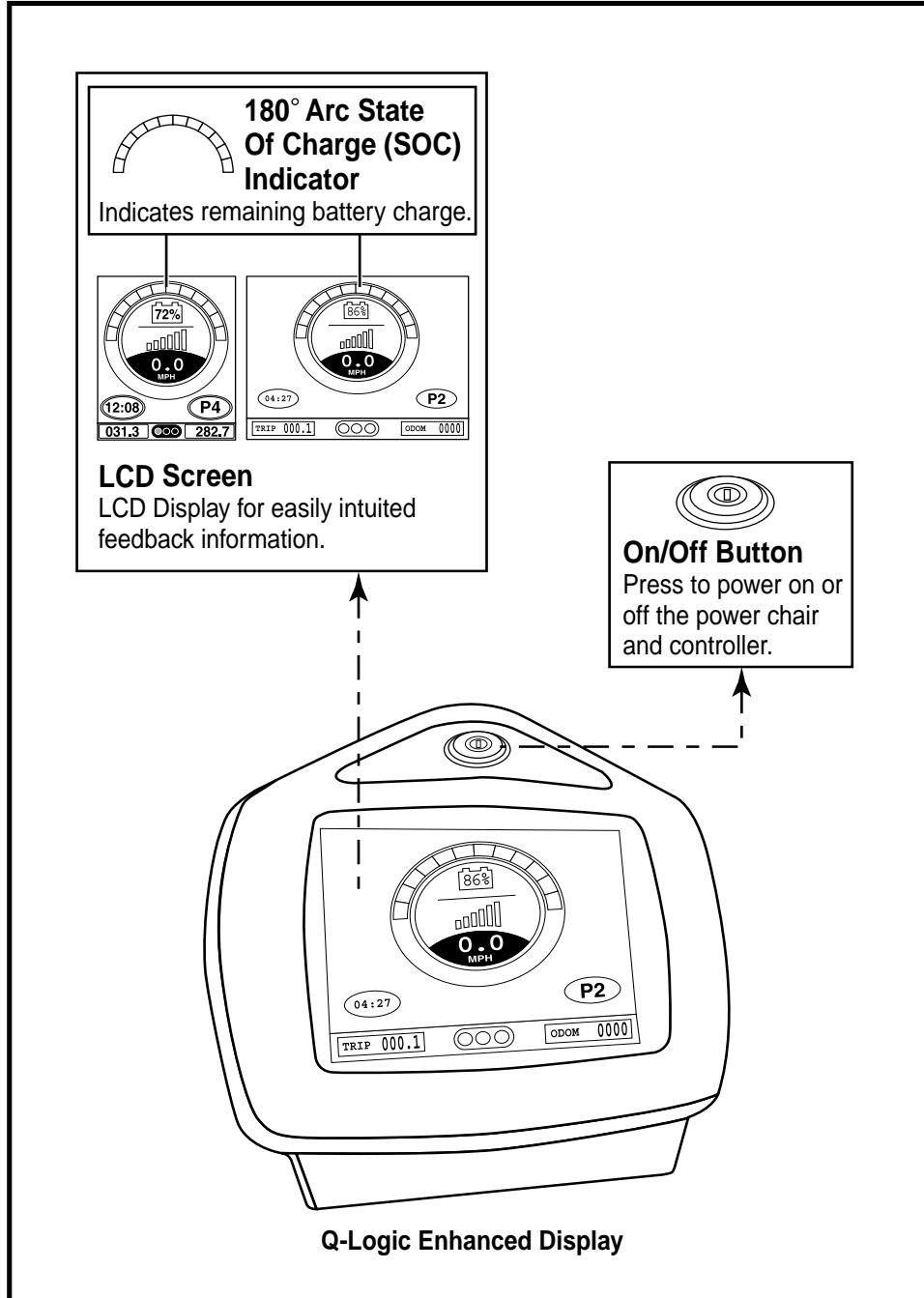


Figure 3. Q-Logic Enhanced Display Components and Connections

OPERATING THE Q-LOGIC CONTROLLER

The Q-Logic hand control is used to operate your power chair and all of its components.

On/Off and Mode Select Lever

The On/Off and Mode Select Lever turns the system on and off and is also used to select drive profiles. See figure 1.



WARNING! Unless faced with an emergency situation, do not use the on/off key to stop the chair. This will cause the power chair to stop abruptly.

WARNING! Always turn the power off when you are stationary to prevent unexpected movement.

Joystick Control

When not disabled by the Attendant Control, the joystick controls the driving speed and direction of the power chair. When the joystick is at rest, it is in the neutral (center) position, and the chair is stationary. In order to drive the chair, the joystick must be taken out of neutral. Moving the joystick in any direction will switch the chair from neutral to drive, and the chair will move in the direction indicated by joystick position. The farther away from the neutral position the joystick is, the faster the chair will move in that direction. To stop chair movement, simply release the joystick or move it back to the neutral position. The chair's electromagnetic brakes will engage after the chair has come to a controlled stop.

Speed Adjustment Knob

The speed adjustment knob is used to control the speed of the power chair. See figure 1.

To change the speed:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. To increase your speed, turn the speed adjustment knob up.
3. To decrease your speed, turn the speed adjustment knob down.

Keypad

The keypad is located directly in front of the joystick. It contains the components that you will use to control your power chair. See figure 4.

Menu Button

The menu button is used to access user accessibility features such as trip odometer reset and time set.

Horn Button

The horn button activates a warning horn.

Key 1 and Key 2 Select Buttons

The key 1 select button is used to quickly and easily select drive profile 1. The key 2 select button selects either drive profile 2, the Seat, or Aux menu option, depending on which hand control your power chair is equipped with. Contact your Quantum Rehab Specialist with any questions.

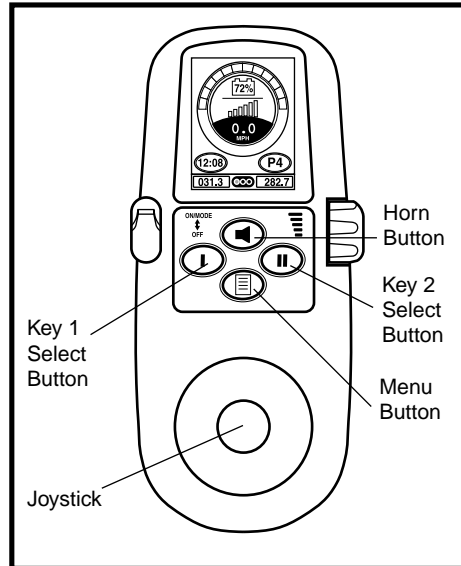


Figure 4. Keypad

LCD Screen

The display screens provide the user with easily intuited feedback information. The three circles at the bottom middle of the screen represent a stoplight. A green light indicates full drive operation, an amber light indicates limited drive operation, and a red light indicates that drive operation is prohibited.

Drive Screen

The LCD screen provides the current time in either 12- or 24-hour clock format, the current profile, drive operation, the speed the chair is traveling at, the speed adjustment setting, the trip odometer, and the overall odometer reading.

In figure 5, the current time is eight minutes past noon (in 24-hour clock format). The chair is operating in profile 4 at 0.0 mph. The trip meter reads 31.3 miles, and the overall odometer reading is 282.7 miles. The battery is at 72% state of charge (SOC). The battery

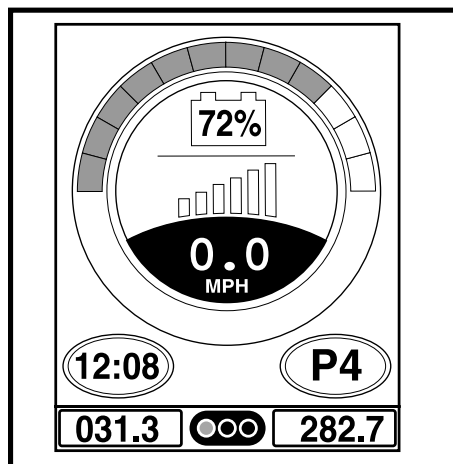


Figure 5. Drive Screen

SOC is shown two different ways; numerically inside the battery icon and graphically as the proportion of the SOC 180° arc.

Drive Profile Selection

Your Q-Logic Controller may be programmed for up to five drive profiles that allow the system to be custom tailored to your environment. The drive profile may be changed two different ways. Profiles 1-5 may be selected by using the On/Off and Mode Select Lever. Profile 1 may be selected by simply pressing the Profile 1 Select Button. Profile 2 may be selected by simply pressing the Profile 2 Select Button, depending on which hand control your power chair is equipped with. The selected profile is displayed on the Drive Screen.

NOTE: Drive profiles are set by your Quantum Rehab Specialist. Contact your Quantum Rehab Specialist to change or add a drive profile.

To select a profile setting using the On/Off and Mode Select Lever:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the On/Off and Mode Select Lever up again to select a drive profile. Continue to cycle through the five available drive profiles.

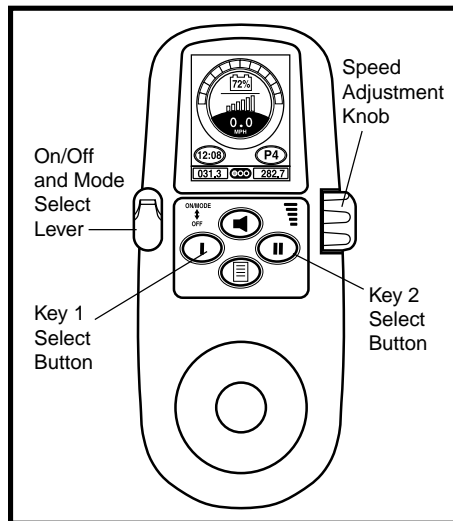


Figure 6. Profile Selection

NOTE: You can only scroll forward through the drive profiles. Pushing the On/Off and Mode Select Lever down will power off the controller.

Actuator Adjustment (Seat Screen)

The Q-Logic Controller can control five power seat actuators using the mode switch and the joystick.

To select and adjust an actuator:

1. Push the On/Off and Mode Select Lever up once to power on the chair and the controller.
2. Push the On/Off and Mode Select Lever up once to select actuator mode.

3. Push the joystick to the right to cycle through the available actuators until the desired actuators are illuminated on the actuator indicator. See figure 7.
4. When the desired actuator is selected, give a forward command to the joystick to adjust position in one direction or give a reverse command to the joystick to adjust position in the opposite direction.
5. Push up and release the On/Off and Mode Select Lever until you return to the desired drive profile.

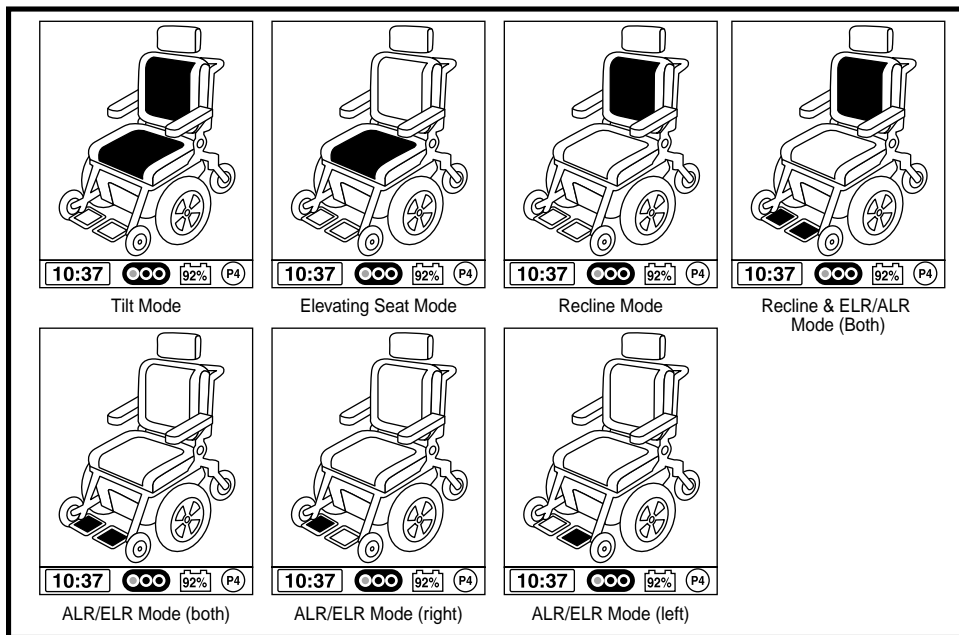


Figure 7. Actuator Selection

Main Menu

The Main Menu screen displays a list of preference settings that are user adjustable: 12-hr./24-hr. clock, amount of backlighting, measurement system (miles/kilometers), English/German language choice, and tripmeter and odometer resetting.

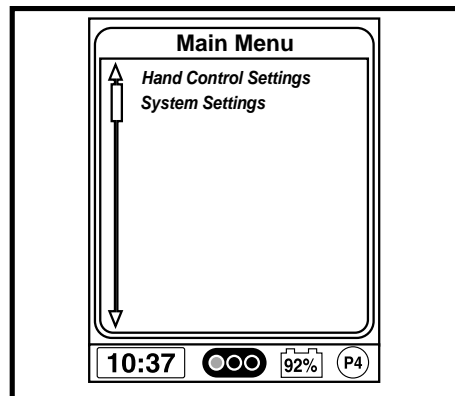


Figure 8. Main Menu Screen

To make a selection from the Main Menu:

1. Push the Main Menu button.
2. Push the joystick up or down to scroll through the available main menu functions.
3. When the desired function is highlighted on the LCD, push the joystick to the right to select that function.
4. To return to the previous screen, push the joystick to the left.

Auxiliary (Aux) Menu

The Aux Menu screen displays the auxiliary operations that are available when operating in the Aux profile. In a standard basic system with only a hand control and a power module, typically there is no Aux profile. In more complex systems, an Aux profile provides access to the operations made possible by the additional modules. Contact your Quantum Rehab Specialist for more information.

Standby Select Menu

The Standby Select Menu screen appears after the programmed timeout when Standby Select is enabled. Standby Select allows the user to navigate through the available profiles without the use of a Mode key. The profile that was active when the timeout occurred is highlighted. Contact your Quantum Rehab Specialist for more information.

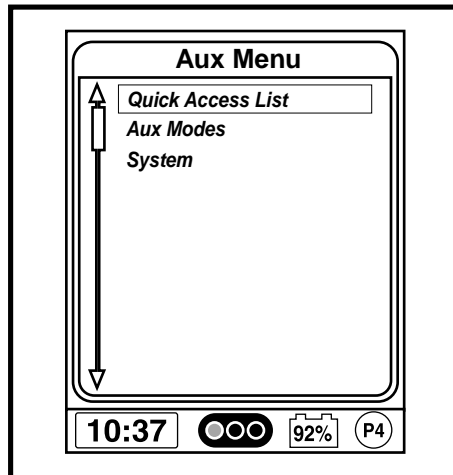


Figure 9. Aux Menu Screen

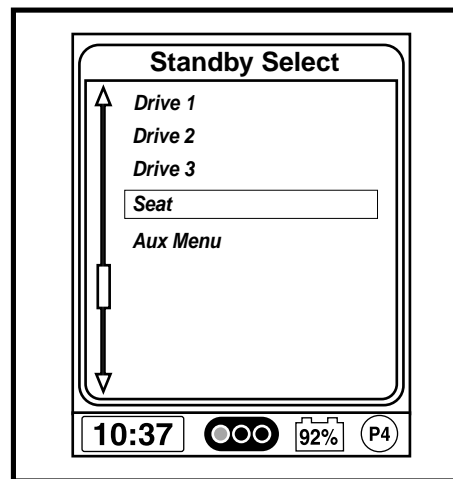


Figure 10. Standby Select Menu Screen

Attendant Control/Stand Alone Joystick

The Attendant Control module can also be used as a Stand Alone Joystick (SAJ) in conjunction with an Enhanced Display, depending on how the system is configured. For more information on this application, contact your Quantum Rehab Specialist.

The Attendant Control is for use by an ambulatory attendant and has the following controls:

- On/Off Button
Enables/disables power
- Battery Condition Meter
Indicates battery charge
- Actuator LEDs
Indicates actuators in use
- Mode LED
Used for profile selection
- Joystick
Controls speed and direction in Drive mode; selects actuators in Seat mode

NOTE: When in use, the Attendant Control overrides hand control commands.

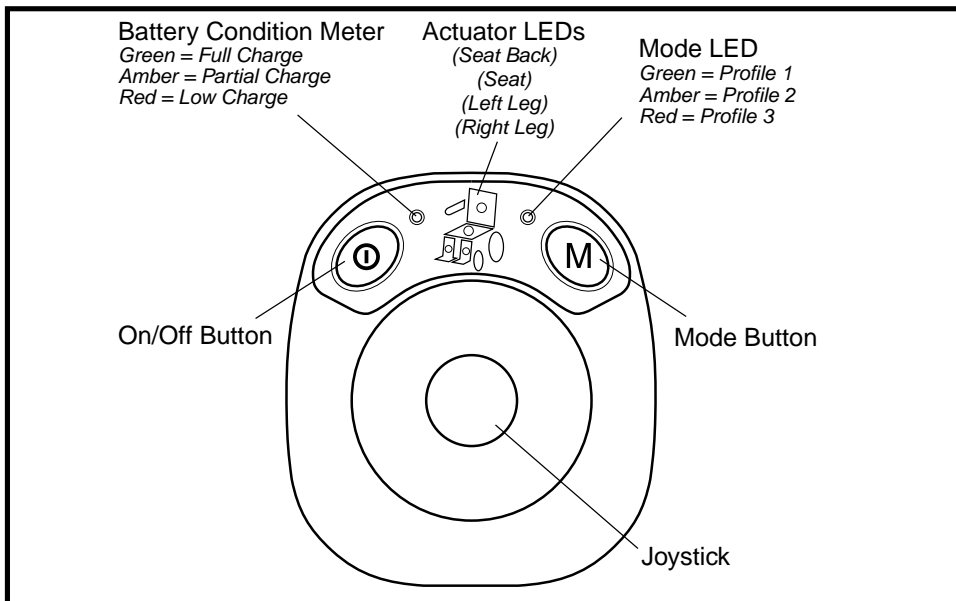


Figure 11. Attendant Control

Enhanced Display

The Enhanced Display module can be used to provide a graphical display for the Stand Alone Joystick or another input device without a display, such as a TASH switch. When used with the hand control, it provides a larger display than the hand control's LCD. The Enhanced Display is mainly used in more advanced applications. Contact your Quantum Rehab Specialist for more information.

The Enhanced Display has the following controls:

- On/Off Button
Enables/disables power
- On/Off Jack (not shown)
Allows for remote On/Off switch installation
- LCD Screen
A color LCD display that may be equipped with built-in infrared (IR) for remote control. It is available with Bluetooth and can be operated by remote TASH switches or a joystick.

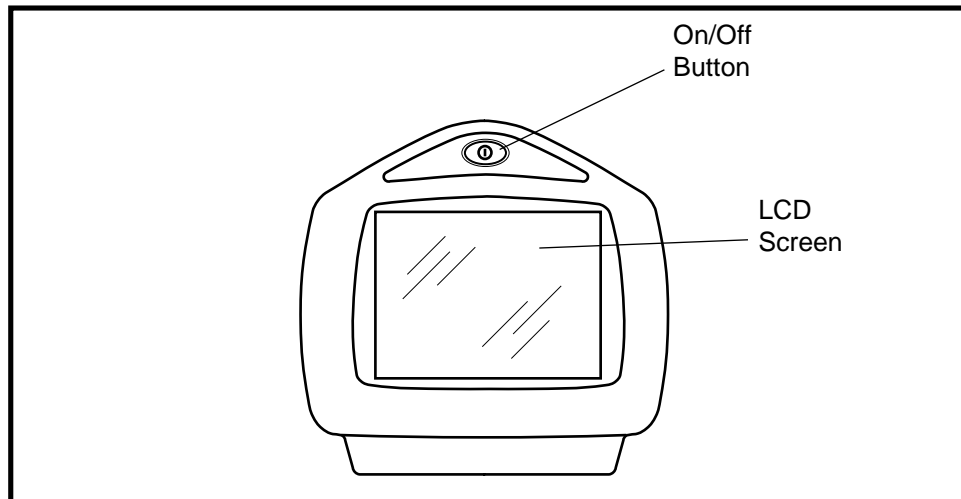


Figure 12. Enhanced Display

SLEEP MODE

The Q-Logic Controller offers a sleep mode feature which will shut off the main power if the joystick remains stationary for a programmed period of time from 5-240 minutes. To restore power and resume operation of the chair, push the On/Off and Mode Select Lever up once.

THERMAL ROLLBACK

The Q-Logic Controller is equipped with a thermal rollback circuit which monitors the temperature of the chair's motors and controller. If either exceeds the safe operating temperature, the controller reduces the output to 20% of full operation level. This reduces the chair's speed and allows a cool down period. Once the temperature returns to a safe level, the chair will resume normal operation.

BATTERY CONDITION METER

The battery condition meter is located in front of the joystick on the hand control and as an LED on the Attendant Control (see figure 1, 2 or 11).

Hand Control Battery Condition Meter

The state of charge (SOC) on the hand control is shown two different ways; as a 180°-arc illuminated display and numerically inside the battery icon. See figure 1.

- **180°-arc and battery icon are green:** Batteries charged.
- **180°-arc and battery icon are yellow:** Charge batteries if possible.
- **180°-arc and battery icon are red:** Charge batteries as soon as possible.

NOTE: When charging the battery, the 180°-arc will ripple continuously.

Attendant Control Battery Condition Meter

The state of charge (SOC) on the Attendant Control is shown on an LED. The color of the tri-color LED indicates the battery SOC. See figure 11.

- **LED is green:** Batteries charged.
- **LED is amber:** Charge batteries if possible.
- **LED is red:** Charge batteries as soon as possible.

NOTE: When charging the battery, the LED sequences continuously.

Q-LOGIC ERROR CODES

The Q-Logic displays four types of messages: information, warning, error, and general error. See figure 13.

- **Information:** Displays information that does not impact power chair functionality or performance.
- **Warning:** Alerts you to conditions that may affect power chair functionality and performance.
- **Error:** Alerts you to conditions that influence power chair functionality and performance.
- **General Error:** Alerts you to system or component failures that greatly influence power chair functionality and performance and may result in emergency shutdown.

Error codes are displayed on the LCD by number. The following table identifies the error codes that may be easily rectified, probable causes, and possible solutions. If you receive one of these error codes, follow the recommended solution and if the problem persists, or you receive any other error code or experience any other problem with your power chair, contact your Quantum Rehab Specialist.

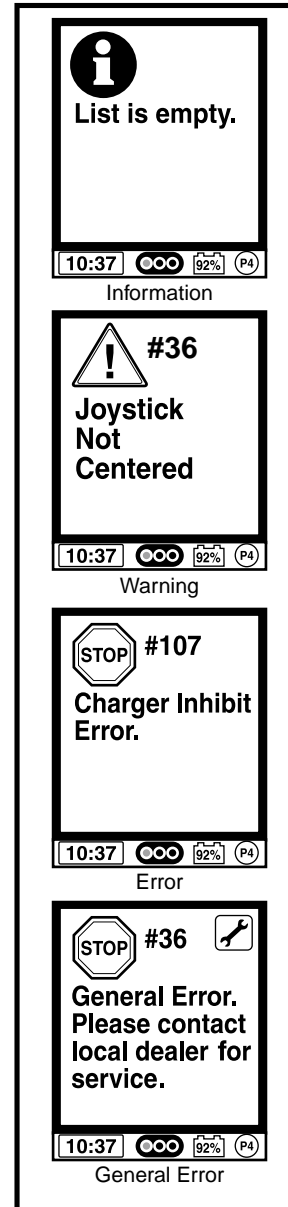


Figure 13. Types of Errors

ERROR CODE	DIAGNOSIS	SOLUTION
35, 37	Joystick Fault/Connection	Check if joystick cable is connected.
36, 110	Joystick Not Centered	Release joystick.
46	High Battery Voltage	Disconnect charger.
47, 101,105	Low Battery Voltage	Charge battery.
49-53	Motor Not Connected	Check motor brake connector.
74-75	Motor Disconnected	Check motor brake connector.
81-90	Motor/Brake Fault	Check motor brake connector.
107	Charger Drive Inhibit	Disconnect charger.
111-112	Center Detect Fault	Check joystick cable connection.
131-132	Motor Fault	Check motor wiring.
141,187	Drive/Actuator Restriction	Clear restriction.
192-195	Motor Disconnected/Shorted	Check motor brake connector.
200-201	Motor Fault	Check motor wiring.

CARE AND MAINTENANCE

Refer to your power chair owner's manual for proper cleaning and disposal instructions.

WARRANTY

For two (2) years from the date of purchase, Pride will repair or replace at our option to the original purchaser, free of charge, the controller or any of its components found upon examination by an authorized representative of Pride to be defective in material and/or workmanship.

NOTES

NOTES

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A Division of Pride Mobility Products® Corp.

Pride Mobility Products Corporation

182 Susquehanna Avenue
Exeter, PA 18643-2694
USA

Pride Mobility Products Company

380 Vansickle Road Unit 350
St. Catharines, Ontario L2R 6P7
Canada

Pride Mobility Products Ltd.

Unit 106, Heyford Park Camp Road
Upper Heyford, Oxfordshire OX25 5HA

Pride Mobility Products Australia Pty. Ltd.

21 Healey Road
Dandenong, 3175
Victoria, Australia

Pride Mobility Products Italia S.r.l.

Via del Progresso - ang. Via del Lavoro
Loc. Prato della Corte
00065-Fiano Romano (RM)

Pride Mobility Products Europe B.V.

Tijnmuiden 28
1046 AL Amsterdam
The Netherlands

Pride
Mobility Products Corp.

www.pridemobility.com www.prideservice.com www.quantumrehab.com

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