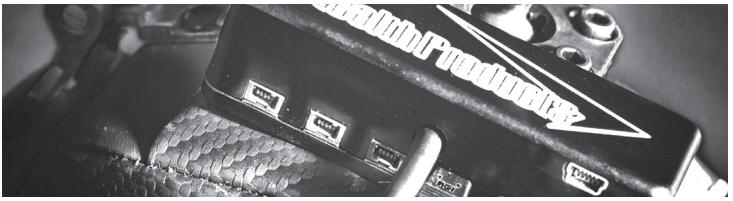
i-Drive Head Array

Usage Guide and Maintenance Manual for i-Drive Alternative Control Head Array

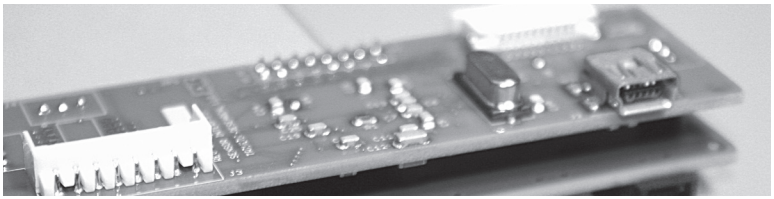


Published by Stealth Products, Inc.
October 21, 2013
UMP-260813-R4

Stealth Products, Inc.
104 John Kelly Drive
Burnet, Texas 78611
Tel: (512) 715-9995
Toll Free: 1(800) 965-9229
Fax: (512) 715-9954
Toll Free: 1(800) 806-1225
Email: info@stealthproducts.com

European Authorized Representative:

Boavista Solutions, Lda.
Ruo Engernheiro Ezequiel de Campos, 541-2°
Zona Industrial do Porto
4110-233 Porto
Portugal
Tel: +351 22 615 11 50
Fax: +351 22 615 11 52
Email: info@boavistiasolutions.eu



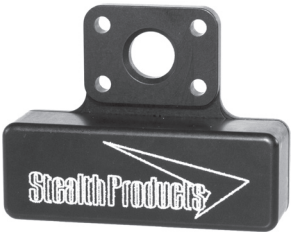
Contents

Introduction 1.0

The i-Drive is designed with the intent to provide mobility to those who need it most. Utilizing stealth's tried and true head positioning systems and revolutionary technology developed by Trident Research, the i-Drive provides great support to the head with the most diverse programmable head array ever.

Ultra-Pro

Tri-Array



i-Drive Control Unit

Attention!

Instructions are designed with the intended purpose of use with the standard configurations of i-Drive Head Arrays. For further assistance, or more advanced steps in set-up, please contact us here at Stealth Products, Inc.

Telephone: (512) 715-9995 Toll Free: 1(800) 965-9229

About the Technology 1.1

Integrated circuit and digital signal processing has advanced significantly since the invention of the modern microprocessor. Today's smart phones and tablet devices are driving the state of technology in this area, making it affordable to apply sophisticated technologies by combining reliable integrated circuits with modern electronics board design and signal processing.

Technology Driven 1.2

A proximity sensor provides the ability to detect the presence of nearby objects without any physical contact. Proximity sensor designs have demonstrated high MTBF (Mean Time Between Failure) numbers primarily through an absence of mechanical parts and minimized physical contact between sensor and sensed object. This technology is not new to the industry but Stealth has teamed up with Trident Research to make it the best in the industry. Our drive control packages offer quality sensors that will allow for the best outcome for access and an interface for the smoothest driveability.

Factory Settings 1.3

Fig.1.3.1

Port 1	Left	Proximity Sensor
Port 2	Forward	Proximity Sensor
Port 3a	Mode/Reset	1/8" Mono
Port 3b	Not Assigned	1/8" Mono
Port 4a	Not Assigned	1/8" Mono
Port 4b	Not Assigned	1/8" Mono
Port 5	Reverse	Proximity Sensor
Port 6	Right	Proximity Sensor

With six available input ports the i-Drive interface gives access to four proximity sensors and four mechanical switches allowing for eight independent function switches. A dongle with two 1/8"mono ports is provided in every interface package, and additional dongles may be purchased directly from Stealth. The associated i-Drive Advanced Programming Software allows for quick port assignability and higher level of sensor adjustability.

Installation 2.0

The i-Drive plugs into the 9 pin port on the power chair's control interface. The location of the port depends on the manufacturer of the interface. Follow the instructions for your interface manufacturer in these next sections. *(see Fig2.0.1 for 9 pin female i-Drive plug)*

Fig.2.0.1

R-net Omni Specialty Control Interface Installation 2.1

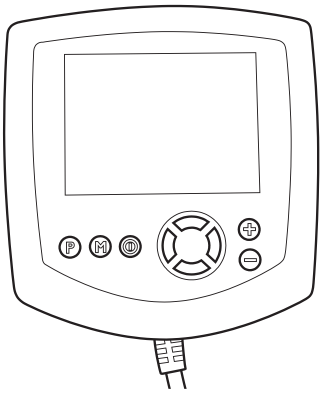


Fig.2.1.1

Attention!

R-Net OBP Dongle required

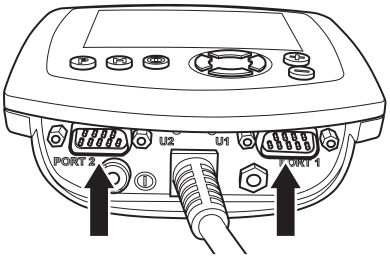


Fig.2.1.2

Menu Navigation

- Navigate with up and down on the circular navigation buttons
- Return to the previous menu or exit with left on the circular navigation buttons
- Select a menu item for more options with right on the circular navigation buttons
- Toggle highlighted menu items with the plus and minus buttons

Setup

1. Power off the chair with the power button on the joystick or display
2. Disengage the motors
3. Plug the programming dongle in line with the cord from display to chair electronics
4. Ensure all the cords for the display are properly connected to the chair
5. Connect i-Drive Alternative Control into "Port 1" or "Port 2" on the bottom of the

display *(see Fig.2.1.2)* with 9-pin connector *(see Fig.2.0.1)*

6. ⏻ Power on the chair from the display's power button
7. Press the Ⓜ "Mode" button till you get to the hourglass, and wait for "OBP" menu to load
8. In the "OBP" menu, navigate to "Omni" menu option and select
9. In the "Omni" menu, navigate to "Global" on the menu and select
10. In the "Global" menu, navigate to "Sleep 12V" then ± toggle to "On"
11. Press left until you return to the "Omni" menu
12. In the "Omni" menu, navigate to port you have connected the i-Drive to ("Port 1" or "Port 2") and select
13. In the "Port" menu, navigate to "SID" and ± toggle to "3Swi"
14. In the "Port" menu, navigate to "Switches" and select
15. In the "Switches" menu, navigate to "Switch Detect" and ± toggle to "Off"
16. In the "Switches" menu, navigate to "9 Way Detect" and ± toggle to "Off"
17. Press left until you return to the "Omni" menu
18. In the "Omni" menu, navigate to "Profiled" and select
19. Configure a Profile to use the port you have connected the i-Drive Alternative Control to
20. Press left on the navigation buttons until you have exited all programming menus
21. ⏻ Power off the chair
22. Remove programming dongle
23. Reconnect display, and ensure all the cords for the display are properly connected to the chair
24. The chair is now programmed to recognize the i-Drive, be sure to re-engage the motors before operation

Q-Logic Drive Control System Installation 2.2

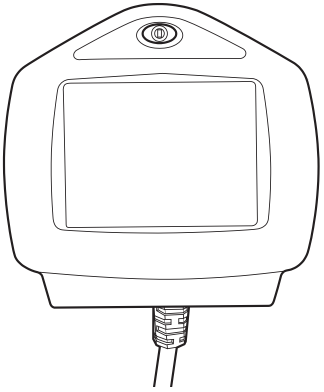


Fig.2.2.1

Attention!

Q-Logic Handheld Programmer Required

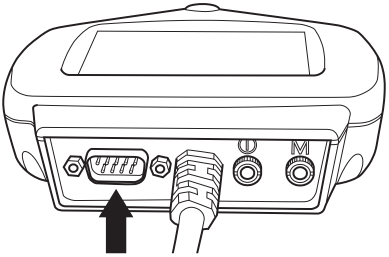


Fig.2.2.2

Menu Navigation

- Navigate the Main Menu with all direction buttons * *Main Menu Only* *
- Select a Main Menu item with the three buttons under the display screen, button actions are displayed on screen with corresponding labels * *Main Menu Only* *
- Navigate with up and down on the navigation buttons
- Return to the previous menu or exit with left on the navigation buttons
- Select a menu item for more options with right on the navigation buttons
- Toggle highlighted menu items with the plus and minus buttons

Setup

1. Power off the chair with the power button on the joystick or display
2. Disengage the motors
3. Ensure all the cords for the display are properly connected to the chair
4. Connect i-Drive Alternative Control into the port on the bottom of the display *(see Fig.2.2.2)* with 9-pin connector *(see Fig.2.0.1 on p6)*
5. Power on the chair from the display's power button
6. Plug in the Q-Logic Handheld Programmer to the back of the Q-Logic Display
7. On the Q-Logic Programmer Select the "Program Adjustments" option
8. In the "Program Adjustments" menu, navigate to "Specialty Control" and select

9. In the “Specialty Control” menu, navigate to “Active Device” and toggle to “3-Switch Head”
10. Press left on the navigation buttons until you have returned to the main menu
11. Unplug the Q-Logic Handheld Programmer
12. Power off the chair * *Powering off the chair completely before operation is mandatory* *
13. The chair is now programmed to recognize the i-Drive, be sure to re-engage the motors before operation

Q-Logic Drive Control System Further Configuration 2.3

Back Pad Toggle

If you want to disable or enable the back pad’s ability to toggle into forward and reverse:

1. Reconnect the Q-Logic Handheld Programmer *(follows steps 1-7 from Setup)*
2. On the Q-Logic Programmer Select the “Program Adjustments” option
3. In the “Program Adjustments” menu, navigate to “Specialty Control” and select
4. In the “Specialty Control” menu, navigate to “3-Switch Head” and select
5. In the “3-Switch Head” menu, navigate to “Back Switch Toggle” and select
6. In the “Back Switch Toggle” menu, navigate to “m:Back Toggle” and toggle to “Enable” to enable forward/reverse toggle with the back pad, or toggle to “Disable” to disable toggle
7. After Configuring the back pad, disconnect the Q-Logic Programmer and restart Chair Electronics *(follow steps 10-13 from Setup)*, or continue to configure other operations

Side Pad Toggle/Control

To disable or enable “Mode” switching with the side pad:

1. Reconnect the Q-Logic Handheld Programmer *(follows steps 1-7 from Setup)*
2. On the Q-Logic Programmer Select the “Program Adjustments” option
3. In the “Program Adjustments” menu, navigate to “Specialty Control” and select
4. In the “Specialty Control” menu, navigate to “3-Switch Head” and select
5. In the “3-Switch Head” menu, navigate to “Device Options / Timing” and select
6. In the “Device Options / Timing” menu, navigate to “m:Device Double Command” and toggle to “Enable” to enable mode switch with side pad, or toggle to “Disable” to disable mode switch
7. After Configuring the back pad, disconnect the Q-Logic Programmer and restart Chair Electronics *(follow steps 10-13 from Setup)*, or continue to configure other operations

Egg Switch Function

If you want to change the function of the egg swtich to switch “Mode” or “Toggle” forward and reverse:

1. Reconnect the Q-Logic Handheld Programmer *(follows steps 1-7 from Setup)*
2. On the Q-Logic Programmer Select the “Program Adjustments” option
3. In the “Program Adjustments” menu, navigate to “Specialty Control” and select
4. In the “Specialty Control” menu, navigate to “3-Switch Head” and select
5. In the “3-Switch Head” menu, navigate to “Switch Options / Timing” and select
6. In the “Switch Options / Timing” menu, navigate to “m:Mode Jack Switch Type” and toggle to “Mode” to enable mode switch with the Egg Switch, or toggle to “Toggle” for forward/reverse toggle
1. After Configuring the back pad, disconnect the Q-Logic Programmer and restart Chair Electronics *(follow steps 10-13 from Setup)*, or continue to configure other operations

i-Drive Advanced Programming Software 3.0

The i-Drive's advanced programming software is not required to operate the drive control, but is available to ensure a customized fit and driving experience. Programming the i-Drive is simple. By connecting a tablet or smartphone and using the i-Drive Advanced Programming Software application you can:

- Dynamic Channel Assignment—any port can control any of the 5 outputs
- Adjust Activation Proximity—Change the range of motion required for switch activation
- Provide an adjustable double tap feature that extends chair double tap limits
- Configuration—Program by Bluetooth (available soon)
- Attendant Control via Bluetooth (available soon)

Getting Started 3.1

The first step to begin use of the i-Drive Head Array Programmer is downloading the software. Included with your i-Drive head control system should be a card with a link to download the application. If there are any difficulties obtaining software, contact Stealth Products, Inc.

After the Software has been installed onto your device, you can begin utilizing the Advanced Programming Software. Launch the "iDrive Head Array Programmer" application on your device, and with a USB to Mini-USB cable, connect the i-Drive to your PC or Tablet. Allow time for the i-Drive to make a full connection with your computer.

Warning!

Please manually disengage both drive motors before utilizing the ***Setup Wizard***, ***Diagnostics*** and ***Config***. If motors are not disengage, chair could move during setup.

Fig.3.1.1

Connecting to the i-Drive

After adequate time is given to allow the i-Drive to connect to your computer, and you have launched the application click the connect button. *(It may be required to change the "COM" in the drop-down menu next to the connect button, see Fig.3.1.1)*

Fig.3.1.2

Setup Wizard Feature

The ***Setup Wizard*** *(see Fig.3.1.2)* will guide you through the initial port configuration and channel assignment of the i-Drive Head Array.

Fig.3.1.3

Diagnostics Feature

With real time ***Diagnostics*** *(see Fig.3.1.3)* you are able to observe pad behavior as the head array is activated by the user. This is useful to fine tune the i-Drive and confirm it is operating properly.

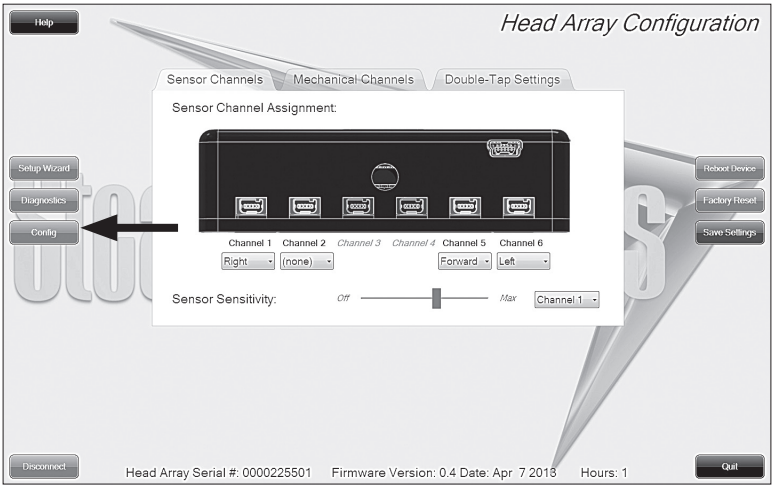


Fig.3.1.4

Configuration Feature

Head array ***Config***uration *(see Fig.3.1.4)* allows you to adjust the way the i-Drive activates and allows you to fine tune the function and sensitivity of the head array.

Fig.3.1.5

Help Feature

Clicking the ***Help*** button *(see Fig.3.1.5)* will activate help. When help is active, the help button will be green and a question mark will be displayed next to your cursor. With help mode active, clicking buttons and menu items will pop-up with an explanation of what the clicked object is and how it can be utilized. To disable help, click on the help button again. *(help button will be black when inactive and green when active)*

Fig.3.1.6

Closing the i-Drive Head Array Programmer

When you are finished configuring the i-Drive, you can click the ***Quit*** button in the bottom right of the screen to close the application. *(see Fig.3.1.6)*

Running the Setup Wizard 3.2

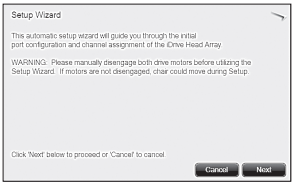


Fig.3.2.1

The ***Setup Wizard*** will guide you through the initial port configuration and channel assignment of the i-Drive Head Array. To begin the ***Setup Wizard***, click the ***Setup Wizard*** button on the left of the screen. *(see Fig.3.1.2 on p12)*

The ***Setup Wizard*** window will pop-up on screen. *(see Fig.3.2.1)* The ***Setup Wizard*** will walk you through a 7 step setup process. Follow the instructions on screen or push ***Cancel*** to quit Setup.

Running Real-Time Diagnostics 3.3

To begin the ***Diagnostics***, click the ***Diagnostics*** button on the left of the screen. *(see Fig.3.1.3 on p13)*

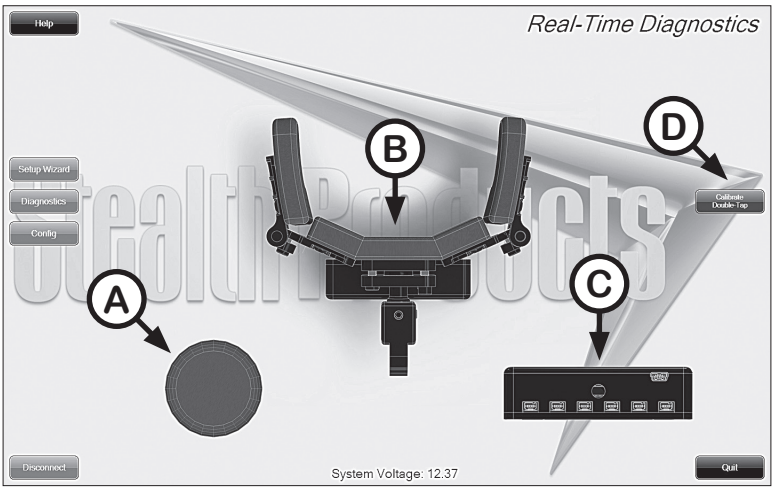


Fig.3.3.1

A. Mode Switch activation
B. Left, Right, and Back pad activation
C. Corresponding i-Drive port when switch is pressed
D. Double-Tap Calibration

	Attention!
⚠	Double-Tap needs to be enabled in the Configuration menu Double-Tap Settings before ***Double-Tap Calibration*** can be used.

i-Drive Configuration Settings 3.4

To begin the ***Config***, click the ***Config*** button on the left of the screen. *(see Fig.3.1.4 on p13)*

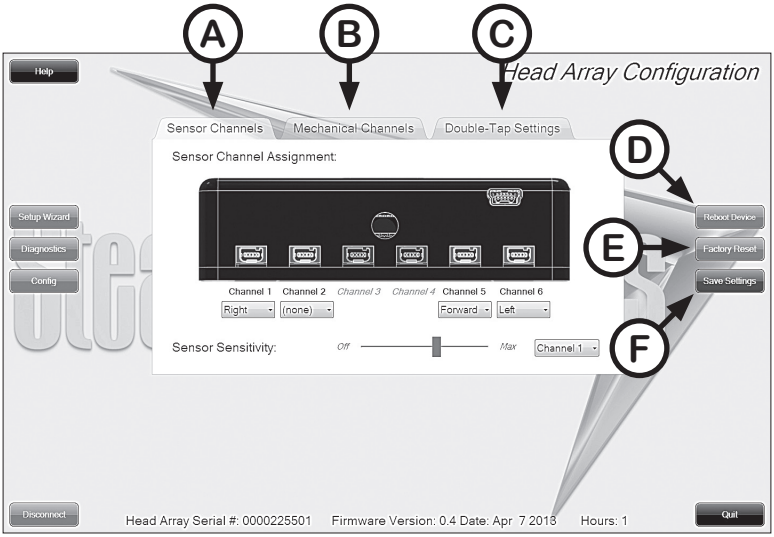


Fig.3.4.1

A. ***Sensor Channels*** Tab - Navigates to the Sensor Channels menu *(see Fig.3.4.2 on p17)*

B. ***Mechanical Channels*** Tab - Navigates to the Mechanical Channels menu *(see Fig.3.4.3 on p17)*

C. ***Double-Tap Settings*** Tab - Navigates to the Double-Tap Settings menu *(see Fig.3.4.4 on p18)*

D. ***Reboot Device*** Button - Reboots the i-Drive

E. ***Factory Reset*** Button - Resets all settings to factory default

F. ***Save Settings*** Button - Saves your settings

Attention!

Be sure to save your settings with the ***Save Settings*** button after all the desired changes are made. *(see D on Fig.3.4.1)*

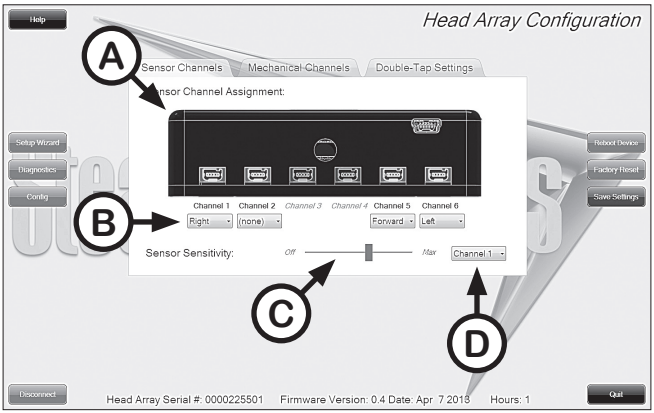


Fig.3.4.2

Configuration: Sensor Channels

A. Diagram that shows which channel switches are being modified

B. Drop down menus that allow you to assign function per channel

C. Sensor Sensitivity - Slider that changes the sensitivity of the selected channel

D. Changes the selected Channel for the sensitivity slider C

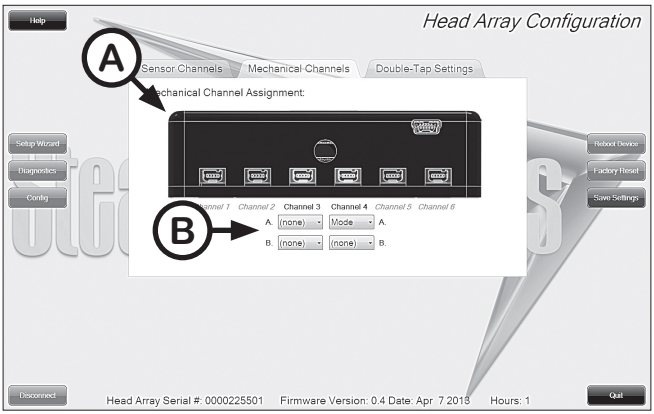


Fig.3.4.3

Configuration: Mechanical Channels

A. Diagram that shows which channel switches are being modified

B. Drop down menus that allow you to assign function per channel. Mechanical Channels have 2 inputs by dongle.

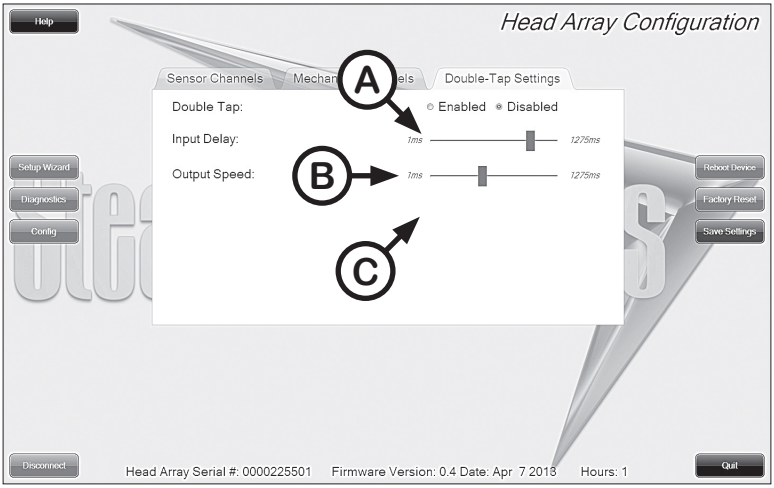


Fig.3.4.4

Configuration: Double-Tap Settings

A. ***Double Tap*** - Enabling Double-Tap allows for adjustment of Double-Tap input and output timing.

B. ***Input Delay*** - Amount of time for Double-Tap command capture.

C. ***Output Speed*** - Time period between Mode output pulses. This value should match the Double-Tap Input Timing of the chair.

Attention!

It's recommended to use ***Calibrate Double-Tap*** option in the ***Diagnostics*** to get a properly timed double tap setting for the user. *(see Fig.3.3.1 on p15)*

Care and Maintenance 4.0

Ensure the hardware you're using stays in working order by keeping it cared for and maintained.

- Keep electronics dry and out of water. Getting electronics wet will cause irreversible damage to the circuitry.
- Periodically check the hardware for loose screws or worn parts. Replace or repair the parts as needed.
- To clean aluminum, use a mild nonabrasive household cleanser (without getting electronics wet.)
- To wash covers: remove cover from the pad, machine wash cold on a delicate cycle and drip dry afterwards.
- On the hardware, lightly tighten set screws until they are snug, then tighten an extra quarter turn. Do not over tighten set screws! Over tightening set screws will prevent hardware from functioning properly and could cause irreversibly damage the hardware.

Safety 5.0

Avoid getting electronics wet and working with electronics with wet or damp hands, this could cause minor to sever electrocution resulting in personal injury and/or product damage.

Customer Satisfaction 6.0

Here at Stealth Products, we pride ourselves on 100% customer satisfaction. Your complete satisfaction is important to us, so please feel free to offer any feedback or suggested changes that will help improve the quality and usability of our i-Drive products. You may reach us at:

104 John Kelly Drive, Burnet, Texas 78611
Phone: (512) 715-9995 Toll Free: 1(800) 965-9229
Fax: (512) 715-9954 Toll Free: 1(800) 806-1225
info@stealthproducts.com

Warranty 7.0

Stealth Products, Inc. warrants this product against failure due to defective materials or workmanship as follows:

Covers	180 Days
Hardware	5 Years
Electronics	5 Years

Limitations

Stealth Products, Inc. does not warrant damage due to, but not limited to:

- Misuse, abuse or misapplication of products .
- Modification of product without written approval from Stealth Products, Inc .
- Any alteration or lack of serial number where applicable will automatically void this warranty .
- Stealth Products, Inc. is liable for replacement parts only .
- Stealth Products, Inc. is not liable for any incurred labor costs.

Caution!

These products are designed to be fitted, applied and installed exclusively by a health care professional trained for the purposes. The Fitting, application and installation by a non qualified individual could result in serious injury.

Information Reference 8.0

Serial Nº (SN#):_____ Purchase Date:_____

Chair Manufacturer:_____ Model:_____

Purchase Nº (PO#):_____ Sales Order Nº (SO#):_____

Notes 9.0

Notes

Stealth Products, Inc.
104 John Kelly Drive
Burnet, Texas 78611

www.stealthproducts.com
info@stealthproducts.com

Tel: (512) 715-9995
Toll Free: 1(800) 965-9229

Fax: (512) 715-9954
Toll Free: 1(800) 806-1225