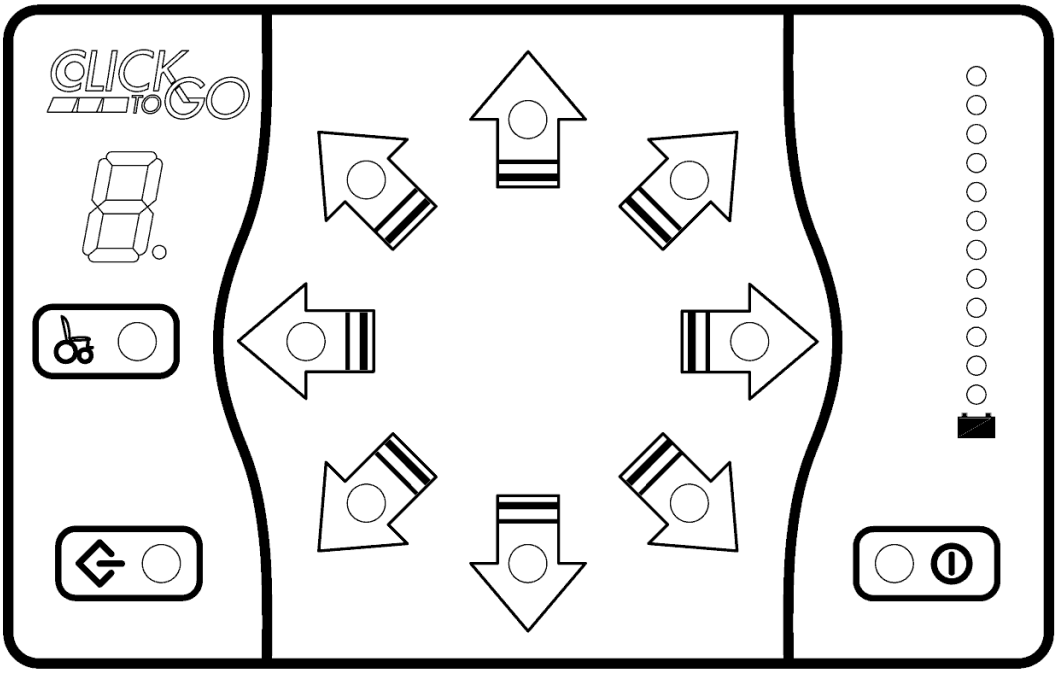
User Manual

revision h

UCM 2

Wheelchair scanning remote for the DX BUS System.

with Heading Lock



Important Notes:

1. Read this manual carefully before installing or operating your ClickToGo.
2. Due to continuos product improvement Unique Perspectives reserves the right to update this Manual. This Manual supersedes all previous issues which must not continue to be used.
3. Any attempt to gain access to or in any way abuse the electronic components of the ClickToGo renders the manufacturer's warranty void and the Manufacturer free from liability.

Contents

This manual is divided into two sections. Section 1 is aimed for Users, Carers, Occupational Therapists and Technicians to quickly and easily understand the basic requirements for operating the ClickToGo control safely. Section 2 contains further information for the Technician and Occupational Therapist to understand the installation, adjustment and fault finding procedures.

In both sections the Maintenance and Safety and Misuse chapters are presented. This information in particular must be read and understood before operating the ClickToGo.

Section 1 – User Operation

Section 2 – Installation, Adjustment & Fault Finding

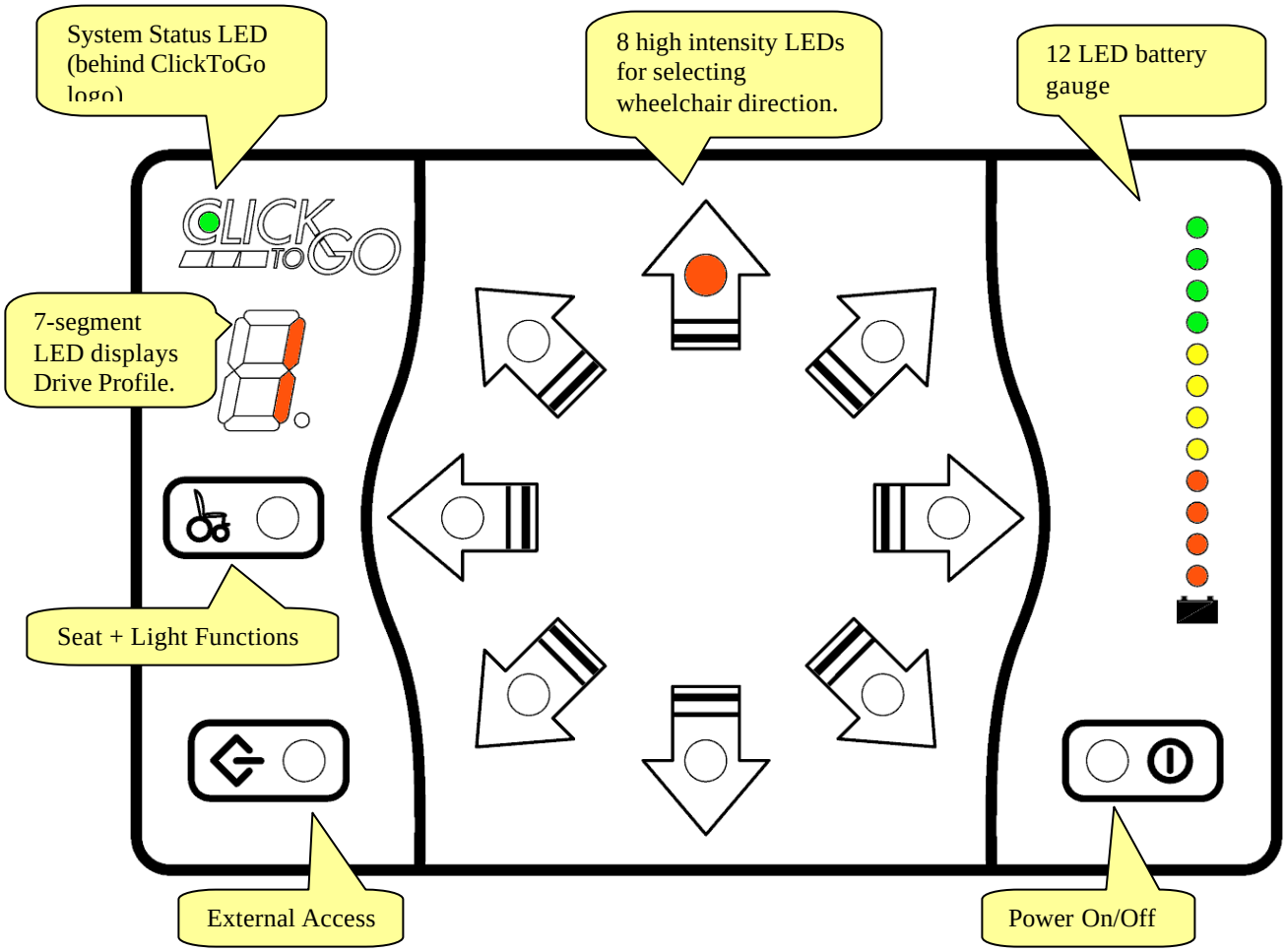
SECTION ONE

USER OPERATION

1 Introduction

The ClickToGo Remote is a Master Remote for control of a DX system. As well as driving it allows a user to control seat function and to operate an external device such as a communication aid or environmental control. On the front panel of the device eight high intensity light emitting diodes (LEDs) are arranged in a circular pattern indicating eight possible drive directions. On either side of this arrangement a further 3 LEDs indicate system modes. External switches connected to the device through a 9 pin D connector allow the user to scan through these LEDs and select function. A variety of sophisticated scanning methods are provided and can be optimised to suit a particular user's needs and ability during supply and fitting of the device. At the top right of the front panel a battery gauge provides visual feedback of the battery voltage level.

ClickToGo Front Panel

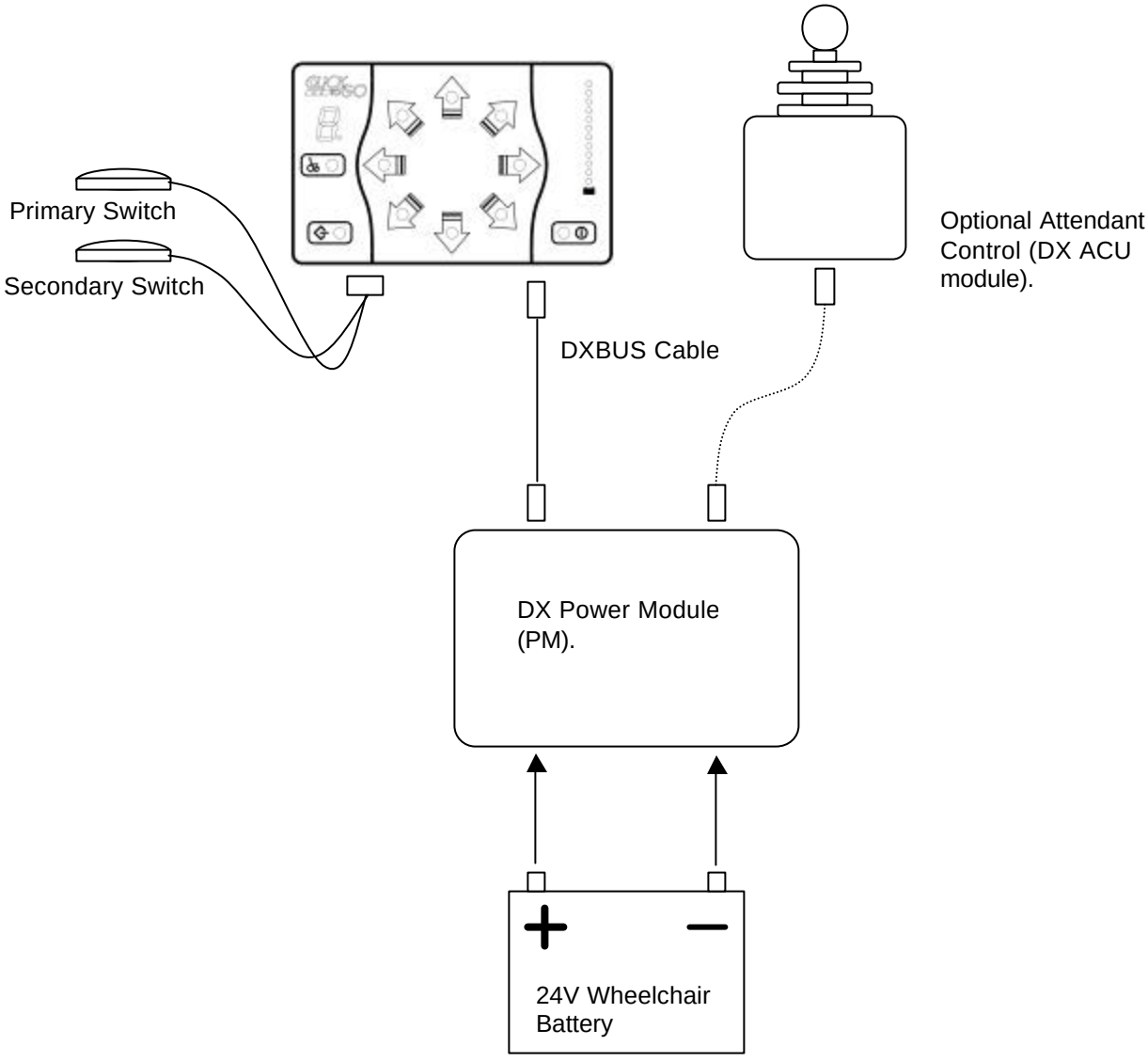


The ClickToGo has a standard DXBUS connector so that it may be connected to the DX System. The ClickToGo can be used to control any powered wheelchair which is fitted with a DX Power Module.

The ClickToGo Remote and the associated DX Power Module are fully programmable to cater for a wide range of chair types and user needs. Correct installation and programming are essential to ensure optimum performance and safety.

The operation mode of the ClickToGo can be programmed without the need of a DX Hand Held Programmer or a Dynamic Wizard. Programming of the ClickToGo operation modes is performed on the device itself.

Example ClickToGo System



2 Features

Single switch automatic scanning

The classic single switch scan. The direction LEDs scan in a clockwise direction. The user presses the primary switch to go in the direction indicated by the illuminated LED.

Scanning speed adjustment

The scanning speed can be set to 1 of 8 possible scanning speeds (min speed every 2 sec, max speed every 250ms).

Single switch Short-Click scanning.

A variation on the single switch scan in which the user has more control. A short click of the primary switch moves the LED on to the next one. Pressing and holding the primary switch activates the function indicated by the illuminated LED.

Step Scan

Allows the user to fully control the scan with two switches. Pressing the primary switch selects the function indicated by the illuminated LED. Pressing the secondary switch moves the LED on to the next one.

Beeper

To assist with scanning an internal speaker beeps ever time a new LED is illuminated. The start of the scan, the Forward direction LED, is indicated by a longer than usual beep.

Switch steering

A unique method of steering the wheelchair with switches without stopping. A second switch is used to steer the chair whilst driving in the forward direction with an intuitive scanning method.

Joystick control (5 switches)

Connecting a ‘digital’ joystick gives the user traditional joystick control. Alternatively up to five switches can be connected giving direct access to forward, reverse, left and right directions.

3 Switch Mode

NEW TO REV H

2 switches are used to turn the chair left or right. A third switch is used to drive the chair forward or back. One press for forwards, Two presses for backwards.

On/Off Capability

The primary switch is also used to turn on and off the DX system. When the DX system is off pressing the primary switch will turn on the DX system and start the

	scanning. To turn off the system the Power Off LED is selected.
Power down timer	An internal timer can be enabled which automatically turns off the DX system after 5 minutes of idle time have elapsed.
Emergency stop switch input	For the attendant a single switch allows an emergency stop feature.
External Device Control  **(communication aid and/or environmental control)**	To operate an external device the external switches LED is selected. The switches are then routed through the ClickToGo and output through a connector to the external device. Wheelchair control is taken back when the primary switch is pressed for a selectable amount of time (1-7seconds).
Chair Function Control 	To operate the DX actuators and lights the chair function LED is selected. The ClickToGo then operates a special scan of the LEDs which allow actuator and light control.
Battery gauge	Battery charge level is indicated by a set of 12 LEDs. These are arranged from bottom to top as four red, four orange, and four green.
System status	Faults within the DX system are indicated by flashing the system status LED located at the top left of the front panel (behind the ClickToGo logo).
Heading Lock	When fitted, the ClickToGo Heading Lock minimises veering on rough and cambered surfaces and dramatically improves performance when driving in a straight line.
Standard Programs	Eight standard programs can be selected within the ClickToGo. These have been designed to suit a wide variety of user needs from 1 switch short click scanning to 5 switch mode with seat function. A standard program is chosen using the program button. See page 59.
Programming button	The scanning methods of the ClickToGo can be programmed without the use of a DX hand held programmer or a DX wizard. The button is located through a hole at the bottom of the device.

Max Speed / Drive Profile selection	The Max Speed / Drive Profile can be selected by the user using the primary switch or with an additional switch or by a technician during programming.
Programming socket HHP / Wizard socket	The standard HHP / Wizard socket for programming the DX system.
Standard DXBUS connection	For connecting the ClickToGo remote, with a DXBUS cable to other DX compatible modules.
Battery charger	Standard 3 pin XLR type battery charger socket.
Gearless/Brushless motor support ***NEW TO REV H***	ClickToGo Rev H is fitted with the latest DX User Control Module (UCM2). This means that the ClickToGo is compatible with all the latest power modules including the DXGB for Gearless/Brushless motors.

3 Operation

The ClickToGo can operate in 5 different modes depending on how many switches the user wishes to use and how s/he wants to use them.

Typically the selection of the operation mode will be carried out by a technician in collaboration with an occupational therapist during assessment of a users switch operation capability, very often in the user's home or place of work. It will normally be carried out as part of the installation procedure.

The User and Carer, therefore, need only understand the operation of the chosen operation mode. Only one of the following 4 descriptions will apply.

Operating Modes

1. Single switch automatic scanning
2. Single switch Short-Click scanning
3. Step Scan / Two switch control
4. Five switch control
5. Three switch control

The ClickToGo is shipped with operating mode 1 selected.

Selecting the operating mode and adjusting parameters is discussed in section 2, Chapter 4.

Turning on the ClickToGo

In all operating modes the ClickToGo is turned on by pressing and releasing the primary switch.

Single switch automatic scanning

This is the classic single switch scan. The direction LEDs scan in a clockwise direction and the user presses the primary switch to go in the direction indicated by the illuminated LED. The rate at which the LEDs scan can be set to 1 of 8 possible values by adjusting the Scanning_Speed parameter.

Single Switch Short-Click Scanning

A variation on the single switch scan in which the user has more control. A short click of the primary switch moves the LED on to the next one. Pressing and holding the primary switch activates the function indicated by the illuminated LED.

The length of time required to hold the primary switch before the function is activated depends on the setting of the Scanning_Speed parameter. When set to minimum the user must hold the switch for 250ms. When set to maximum the user must hold the switch for 2 seconds.

Step Scan / Two switch control

Step Scan mode allows the user to fully control the scan with two switches. Pressing the primary switch selects the function indicated by the illuminated LED. Pressing the secondary switch moves the LEDs in a clockwise direction. Holding down the secondary switch causes the LEDs to scan automatically as in automatic scan mode. Step Scan is without doubt the quickest way to operate a scanning device and removes any hesitancy problems which are associated with automatic scanning.

A further enhancement of this mode is connection of the third switch. Pressing the third switch moves the LEDs in an anti-clockwise direction.

Five switch control

Five switch control allows a user to control the wheelchair using a ‘digital’ joystick connected to the TASH input. The difference between a ‘digital’ joystick and a traditional ‘analog’ joystick is that the speed of the wheelchair is fixed no matter how far forward the joystick is pushed.

An other use of this mode is to connect five separate switches to the TASH input. This gives direct access to the drive directions by switches and is useful for training purposes. Switch 1, the primary switch, turns on and off the DX system. Switch 2 drives the chair into the forward direction. Switch 3 drives the chair into the reverse direction. Switch 4 turns the chair to the left. Switch 5 turns the chair to the right. The corresponding LED on the ClickToGo illuminates when a switch is pressed.

Three switch control

Three switch control allows a user to control the wheelchair using three switches mounted in a headrest. The right hand switch (Switch 1) turns on the wheelchair and drives the chair to the right. If enabled it can also be used to change modes between Driving, Seat function, Lights and External device. The left hand switch (Switch 4) drives the chair to the left. If enabled it can also be used to switch off the wheelchair. The “behind the head” switch (Switch 2) is used to drive the chair forwards or backwards. Pressing and holding it will drive the chair forwards but clicking it once and then pressing and holding it will drive the chair backwards.

Driving the Chair

In all scanning modes the chair is driven by pressing and holding the primary switch when the desired direction arrow is illuminated. To stop driving the primary switch is released.

In Joystick mode / Five switch mode the chair is driven by pressing and holding either switch 2, 3, 4 or 5. To stop driving release the held switch.

In Three Switch mode the chair is driven forward or backwards using by the "behind the head" switch as described previously. Turns left or right are achieved by pressing the left/right switches.

Turning off the ClickToGo

In all scanning modes the ClickToGo is turned off by pressing and releasing the primary switch when the  LED is illuminated.

In the Joystick mode / Five Switch control the ClickToGo is turned off by pressing and releasing the switch 1 (the primary switch).

In Three Switch mode the ClickToGo should be programmed to power down by itself after 3 minutes of idle time (default). In addition the left switch can be programmed to turn off the ClickToGo with a short click. When this parameter is enabled a short click of the left switch turns off the ClickToGo but pressing and holding the left switch drives the chair to the left. An emergency stop switch can also be used

Selecting the Max Speed / Drive Profile

The Drive Speed (1-5) is displayed by a seven-segment display on the left-hand side of the front panel.

To select the Drive Speed the user must hold down the primary switch when the ClickToGo is being turned on. After a moment the Drive Speed number will start changing. The user releases the primary switch when the desired number is displayed. This feature is an option that must be enabled if required. See Programming the ClickToGo, Section 2, Chapter 4.

To allow a carer to adjust the Drive Speed Switch No.5 must be connected. See Section 2, Chapter 3 for details on connecting this switch. Press the switch to change the Drive Speed number (Max Speed). The switch could be mounted at the back of the chair together with the Emergency Stop switch.

Standard Program Number 1

There are eight standard programs within the ClickToGo. Program number 1 is the default and is a clockwise scan of all eight directions including the Power LED. It is illustrated below. For details on the other standard programs see Section 2 Chapter 4, “Choosing a standard program” on page 59.

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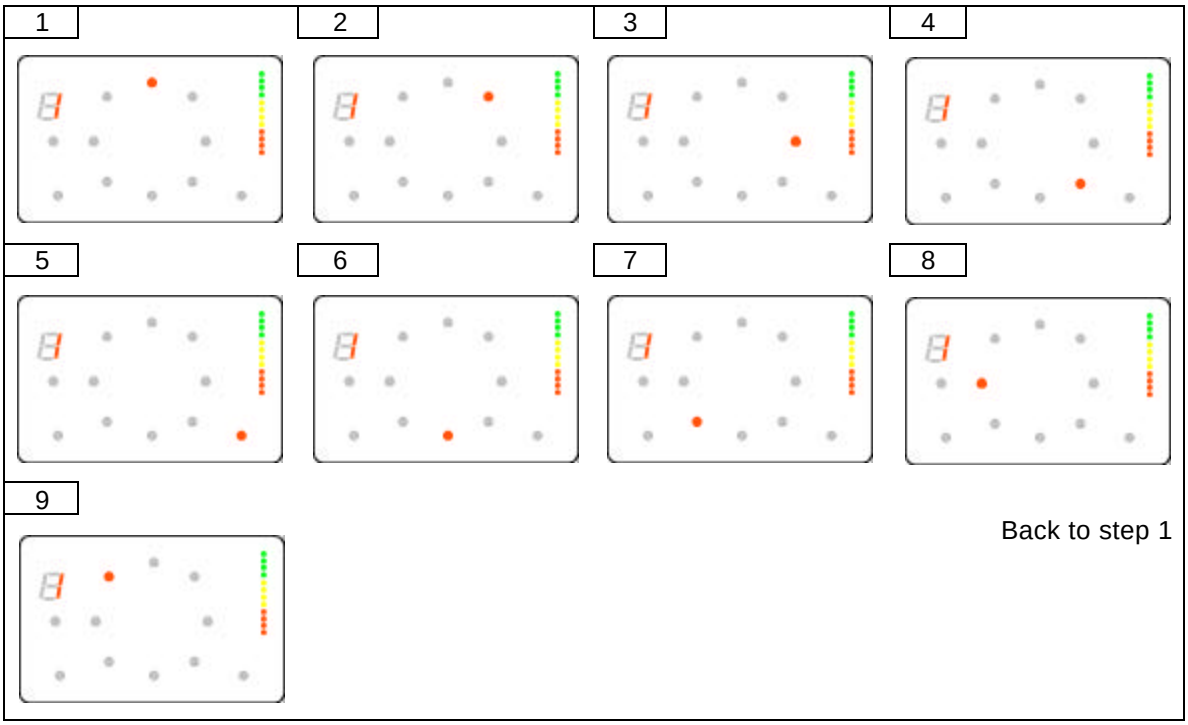


Accessing Seat Function

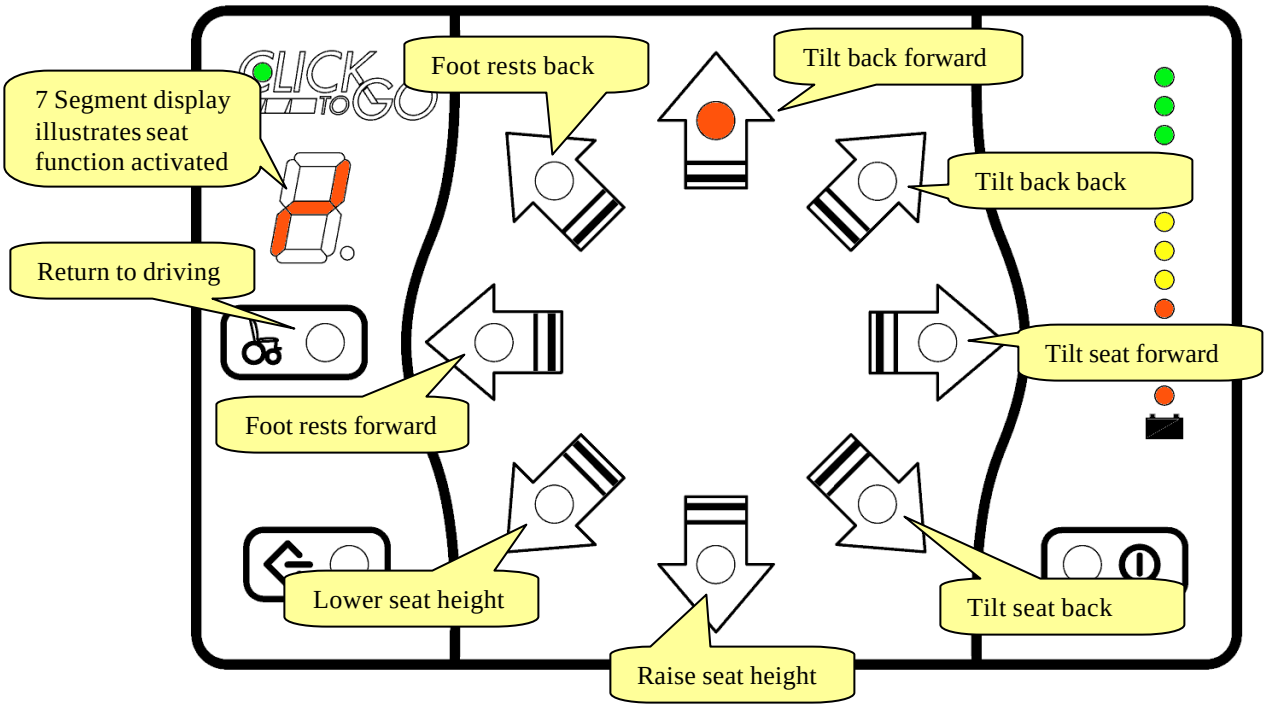
Note: The Seat function is not enabled when the ClickToGo is shipped. It is an option which must be enabled. See Section 2, Chapter 4 ‘Programming the ClickToGo’ on how to include the Chair Function LED in the scan.

The ClickToGo gives access to up to ten seat functions. Seat function can be accessed in a scanning mode and in five switch mode.

Scanning Mode

To access seat function in a scanning mode press the primary switch when the  LED is illuminated. The ClickToGo will enter Seat Function scan mode.

In this mode the LEDs take on a new meaning as illustrated below.



To activate a particular seat function press the primary switch when the corresponding LED is illuminated. The decimal point of the 7-segment display illuminates and the seat symbol blinks to confirm that the function is activated.

To exit seat function access and return to normal driving mode press the primary switch when the LED is illuminated (always at the end of the scan).

Note: You can specify the number of actuators fitted to your chair so that you do not need to scan all eight arrows. See Section 2, Chapter 4 'Programming the ClickToGo' on how to set the number of actuators.

Five Switch Mode

To access seat function in five switch mode press and hold Switch 1. Release the switch when the LED becomes illuminated (about 1½ seconds).

The switches now directly activate actuators 1 and 2 as follows:-

Switch 2 – Actuator 1 UP
Switch 3 – Actuator 1 DOWN
Switch 4 – Actuator 2 UP
Switch 5 – Actuator 2 DOWN

Actuator 1 is normally Seat Forward/Back and actuator 2 is normally Seat Up/Down.

To regain control for driving press and hold Switch1 until the ClickToGo beeps and the  LED becomes illuminated.

Three Switch Mode

In Three Switch Mode switching between the operating modes Driving, Seat Function, Lights and External Access is achieved by making short clicks of the right hand switch.

The  LED becomes illuminated and a seat symbol is displayed when Seat Function mode has been selected.

The “behind the head” switch is used to control actuator 1. Pressing and holding the switch extends the actuator. Clicking the switch once and then pressing and holding it retracts the actuator.

The left and right switches control actuator 2. Press and hold the left switch to extend actuator 2. Press and hold the right actuator to retract actuator 2.

To drive again make short clicks of the right hand switch until the Drive Profile (Speed number) is displayed.

Accessing Light Function

Note: The Light function is not enabled when the ClickToGo is shipped. It is an option which must be enabled. See Section 2, Chapter 4 'Programming the ClickToGo' on how to include the Chair Function LED in the scan.

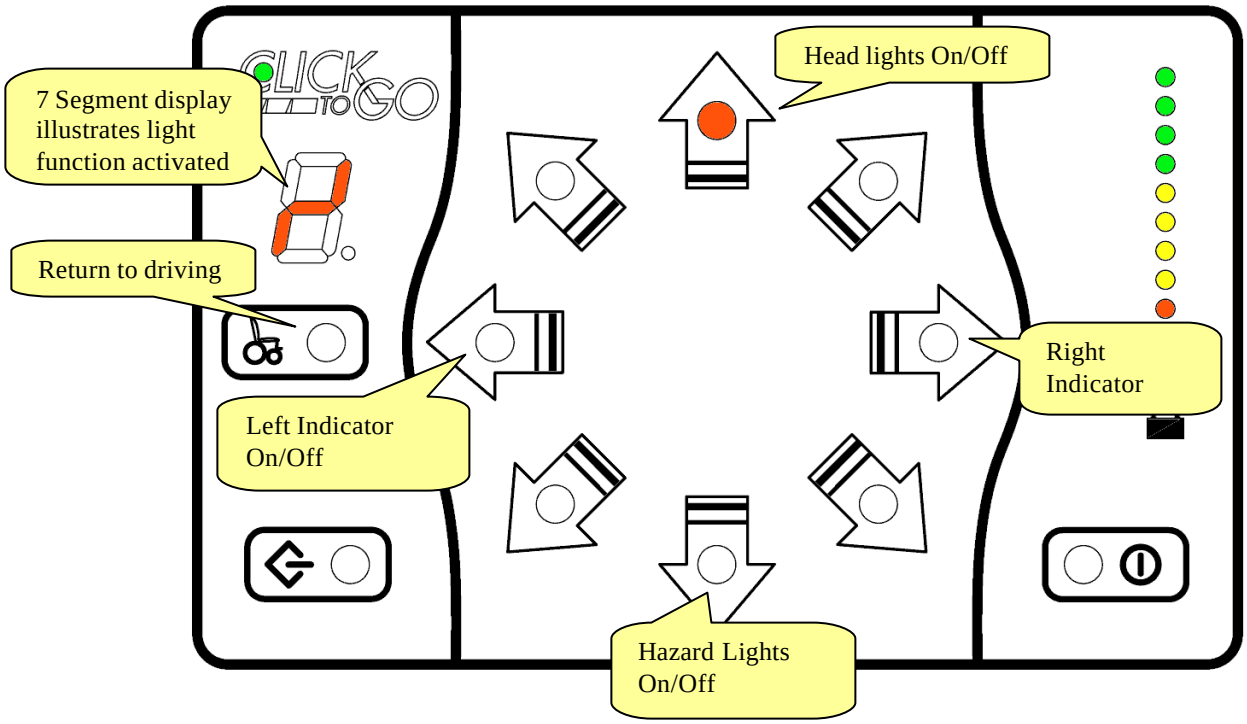
To be able to activate a particular light the corresponding DX system parameters must be set to Yes. See page 77.

The ClickToGo gives access to up to four light functions. Light function can be accessed in a scanning mode and in five switch mode.

Scanning Mode

To access light function in a scanning mode press the primary switch when the LED is illuminated. The ClickToGo will enter Light Function scan mode.

In this mode the LEDs take on a new meaning as illustrated below.



To activate a particular light press the primary switch when the corresponding LED is illuminated. The decimal point of the 7-segment display illuminates and the light symbol blinks to confirm that the function is activated.

To exit light function access and return to normal driving mode press the primary switch when the LED is illuminated (always at the end of the scan).

Five Switch Mode

To access light function in five switch mode press and hold Switch 1. Release the switch when the  LED becomes illuminated and an L appears in the seven segment display.

The switches now directly activate the lights as follows:-

Switch 2 – Head lights
Switch 3 – Hazard lights
Switch 4 – Left Indicator
Switch 5 – Right Indicator

To regain control for driving press and hold Switch1 until the ClickToGo beeps and the  LED becomes illuminated.

Three Switch Mode

In Three Switch Mode switching between the operating modes Driving, Seat Function, Lights and External Access is achieved by making short clicks of the right hand switch.

The  LED becomes illuminated and an ‘L’ is displayed when Lights mode has been selected.

The “behind the head” switch is used to control the head lights and the hazards. Pressing and holding the switch switches on or off the head lights. Clicking the switch once and then pressing and holding it switches on or off the hazards.

The left and right switches control the side indicators. Press and hold the left switch to turn on or off the left hand indicator. Press and hold the right switch to turn on or off the right hand indicator.

To drive again make short clicks of the right hand switch until the Drive Profile (Speed number) is displayed.

Accessing an External Device

Note: The External Access function is not enabled when the ClickToGo is shipped. It is an option which must be enabled. See Section 2, Chapter 4 'Programming the ClickToGo' on how to include the External Access LED in the scan.

The ClickToGo gives access to an external device by routing the switches connected to it to the external device. In this way the external device is controlled by the switch/s as if the switch/s were directly connected to it. For the user this means that there is no extra training involved if s/he wishes to use the device on its own when not in a wheelchair.

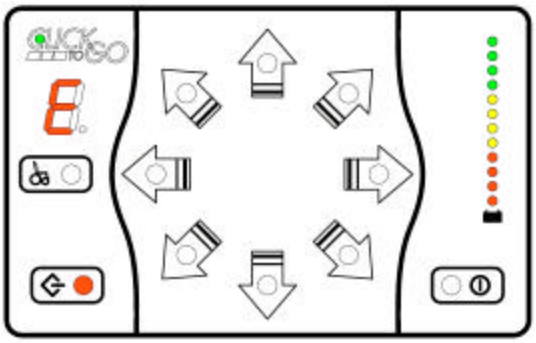
See Chapter 3, Section 2 'Installation and Testing' for technical details on how to wire up to the external device.

An external device can be accessed in any scanning mode and in five switch mode.

Scanning Mode

In a scanning mode the ClickToGo can be connected to two external devices, for example, a communication aid and/or an environmental control. When controlling a communication aid the symbol 'C' is displayed in the 7-segment display. When controlling an environmental control the symbol 'E' is displayed in the 7-segment display. The user selects which device to control by pressing and holding the primary switch when the  LED is illuminated until the desired symbol is displayed, then release the primary switch.

Once selected the primary and secondary switches are routed through to the external device which can then be operated in whatever way it is set up to be operated in. If possible it is best to setup the same operation method on all devices. For example if you are using automatic scanning on the ClickToGo set up the external device for automatic scanning as well, if you are using 2 switch step scanning, set up the external device for 2 switch step scanning as well.



To gain back control of the wheelchair press and hold the primary switch until the ClickToGo beeps and/or the ‘E’ or ‘C’ is replaced by a ‘-‘ in the 7-segment display (about 6 seconds).

Another method of controlling an external device in a scanning mode is the so-called one-shot mode. In this mode the ClickToGo is connected to a one-shot device, for example a talking buddy button. When the  LED is illuminated and the user presses the primary switch the one shot device is activated. When the primary switch is released the scanning continues as before. Use this method to activate a single message or sound.

An advanced mode of the external access is a special scan of the first four LEDs. When an LED is chosen the corresponding switch output (or relay output) is activated. The relays can be set up as non-latching or latching. Refer to page 47 ‘External Setup’ on how to enable this advanced mode.

Five Switch Mode

Operating an external device in five switch mode follows the same principal as before - the external device is accessed as if the five switches were directly connected to it. A good use of this mode is to connect a TASH MiniJoystick to the ClickToGo and use it drive the chair or control the mouse of a laptop computer. Switching between driving and computer access is achieved by pressing down on the MiniJoystick for about 1½ seconds.

See Chapter 3, Section 2 ‘Installation and Testing’ for technical details on how to wire up to the external device.

To access an external device in five switch mode press and hold Switch 1. Release the switch when the  LED becomes illuminated (about 1½ seconds, or 3 seconds if the seat function is also enabled). A ‘C’ will be displayed in the 7 segment display.

Now the five switches are routed through to the external device. Control it as if the five switches were directly connected to it.

To regain control for driving press and hold Switch1 until the ClickToGo beeps and the  LED becomes illuminated (about 6 seconds).

Three Switch Mode

The  LED becomes illuminated and an ‘E’ is displayed when External Access has been selected. Then the three head switches control 3 separate switch outputs (1, 2 and 4 – see page 34) that can be used to control an external device. A short click of the left hand switch is used to go back to driving.

4 Heading Lock

Introduction

The Heading Lock device is a significant technological advancement which improves the driving performance of the ClickToGo. It minimises veering to the left or right on rough or cambered surfaces and dramatically improves performance when driving in a straight line.

The Heading Lock device has its origins in aviation electronics and although similar to a gyroscope is based on accelerometers measuring angular rotation.

Warning: The Heading Lock should not be used to correct a chair that is badly veering due to a mechanical or electrical fault. Before the Heading Lock is fitted any inherent veering of the chair should be addressed and solved. As a rule of thumb if a chair veers to the left when driving on a good surface one way, but veers to the right when driving the other way, then the veer is minimised as much as it can be for that chair. Without Heading Lock, on a good surface, you should expect to notice the chair veering to one side or the other after a distance of 3-4 metres.

How does it work ?

The Heading Lock is similar to a compass. Before you start driving forward it "remembers" which direction you were heading and then as you drive forward attempts to keep you, or lock you, on that heading as the chair veers to the left or right. The left/right corrections that the Heading Lock makes can be seen on the ClickToGo when the Forward Left and Forward Right LEDs flicker. (Note that these indications are disabled when the Active_Steering feature is in use or when the Hide_Indications parameter is enabled).

Installation and Use

The Heading Lock is simple and easy to use. It should be plugged into the ClickToGo expansion port when the ClickToGo is off and then fixed with strong velcro or similar as close as possible to the wheelchair's center of rotation. It does not matter what direction the Heading Lock is facing but it must be fitted in an upright level position.

When the wheelchair is turned on the ClickToGo will pause for 1½ seconds and then initiate a peculiar scan of the display lasting a further 1½ seconds. During this scan the Heading Lock is initialising and the chair must be kept still. If it is not kept still the Heading Lock will not be able to establish what zero rotation is and when instructed to drive forward will rotate at a constant slow speed. Whilst the user may "wobble" the chair when they press their switch to turn it on there

is 1½ seconds before the Heading Lock begins initialising within which to become still.

Note: It is extremely important that the user is able to understand the above principal. If a user is unable to remain still whilst the Heading Lock is initialising the ability to drive forward may be severely impaired and may put the user at risk. In this case the Heading Lock should not be used.

Adjustment

There are two adjustments pertinent to the Heading Lock. The ClickToGo Heading_Lock_Sensitivity parameter allows the left/right correction signals coming from the Heading Lock to be moderated. If the wheelchair "wobbles" or "fish-tails" as a result of over-corrections then this parameter should be reduced.

The second parameter, Heading_Lock_Profiles, determines in which drive profiles the Heading Lock is enabled. Normally Drive Profiles 1 and 2 do not use the Heading Lock whereas Drive Profiles 3, 4 and 5 do use the Heading Lock. This is because the Heading Lock is primarily designed to improve outdoor performance.

A third parameter that can be used to advantage with the Heading Lock is the Power_Down_Timer. If remaining still during start-up is a problem the Power_Down_Timer can be disabled so that the user does not have to turn on their wheelchair frequently.

See Section 2, Chapter 4 'Programming the ClickToGo'.

Limitations

The Heading Lock does not provide 100% correction. Due to a sensitivity to temperature changes a certain amount of "heading drift" can occur within the device and this will result in a slight veer of the wheelchair. Indoors on a good surface with a wheelchair that already demonstrates good straight line driving the use of the Heading Lock may, on occasion, deteriorate performance. Moving from a cool environment to a hotter one and visa-versa are situations when the performance of the Heading Lock may deteriorate temporarily.

Note: The Heading Lock can only be used with Revision G or H ClickToGo's with serial numbers greater than or equal to 0131 or those that have been modified.

5 Batteries and Charging

Battery Type

The DX System is designed to perform optimally with either Lead-Acid or Gel Cell 24 V deep cycle batteries, rated at 20 – 120 Amp hours. The maximum average discharge rate must not exceed half the rated capacity, in Amp hours.

Battery Charging

The battery charger socket is a 3 pin XLR type whose pin configuration is described in Section 2, Chapter 3.

The wheelchair is automatically disabled from driving whenever the battery charger is plugged in.

Progress of the charge can be monitored by turning on the ClickToGo and watching the battery gauge.

Battery Gauge

The battery gauge provides true, useable battery capacity information. A full battery with at least 85% of rated capacity, is represented by all twelve LEDs lit. Some new batteries can start with as little as 80% capacity, developing higher capacity in their early life (sometimes up to 110%), before slowly deteriorating over their rated life.

As the battery voltage drops, the number of LEDs lit reduces from top to bottom. When only the red LEDs are lit, the available battery capacity is typically less than 10%. At this level and below, the Battery Gauge flashes to alert the user that the wheelchair is running on reserve capacity. The battery capacity will reduce more rapidly in the reverse capacity range.

Battery Saver

The Battery Saver is a feature programmed into the DX Remote. When the battery capacity is in the reserve range (below 21V), the wheelchair performance is reduced. This is to preserve the life of the battery by encouraging the user to recharge the battery before it becomes harmfully flat.

Operating the wheelchair with more than two LEDs of the battery gauge lit will generally give normal wheelchair performance. This is provided that the battery size and the PM program settings are matched to the wheelchair.

6 Maintenance

1. The ClickToGo system should be regularly checked for integrity. Loose, damaged or corroded connectors or terminals, or damaged cabling should be reported to your Service Centre and be replaced immediately.

2. The cabling of ClickToGo System including Switch cables, DXBUS cables and Battery cables, should be regularly checked for integrity. They should never be loose. Cables should be neatly attached to the wheelchair frame and mounts so that no possibility exists for a cable to become snagged on the moving parts of the wheelchair itself, the person sitting in the wheelchair, and/or items external to the wheelchair such as door handles etc.

3. All switches connected to the ClickToGo should be regularly tested to ensure that they function correctly.

4. During storage and transport of your wheelchair ensure that there is no possibility that the primary switch can inadvertently by pressed thereby causing the chair to turn on and possible enter a drive state. Always disengage the motor gears and, if possible disconnect the primary switch.

5. Under no condition should a latching switch be connected to the ClickToGo. Only connect non-latching switches.

6. The ClickToGo components and other wheelchair parts should be kept free of dust, dirt and liquids. If necessary wipe with a cloth dampened with warm water or alcohol. **Do not** use solvents or abrasive cleaners.

7. Where any doubt exists, consult your nearest Service Centre or Agent.

8. There are no user-serviceable parts within the ClickToGo. Do not attempt to open the case.

9. In accordance with the requirements of CE marking of this device and the Company's policy, it is requested that re-occurring faults or defects are reported back to Unique Perspectives Ltd.

Warning !! If the ClickToGo is damaged in any way, or if internal damage may have occurred (for example by being dropped), have it checked by qualified personnel before operating.

7 Safety and Misuse Warnings

Do not install, maintain or operate this equipment without reading, understanding and following the proper instructions and manuals, otherwise injury or damage may result.

The completed installation must be thoroughly checked, and all programmable options must be correctly adjusted for safe operation prior to use.

A warning must be conveyed to the wheelchair operator that the controller could cause the chair to come to a sudden stop. In situations where this may affect the safety of the user, this will require the fitting and wearing of a seat belt.

Performance adjustments should only be made by professionals of the health care field or persons fully conversant with this process and the driver's capabilities. Incorrect settings could cause injury to the driver, bystanders, damage to the chair and surrounding property.

After the wheelchair has been set up, check to make sure that the wheelchair performs to the specifications entered in the programming procedures. If the wheelchair does not perform to specifications, turn the wheelchair off immediately and re-program. Repeat procedure until the wheelchair performs to the specifications.

Do not operate the DX system if it behaves erratically, or shows abnormal response, heating, smoke or arcing. Turn the system off, disconnect the battery or open the battery overload switch, and consult your service agent.

Do not operate your DX system if the battery is nearly flat as a dangerous situation may result due to a loss of power in an inopportune place.

Ensure the controller is turned off when not in use.

No connector pins should be touched, as contamination or damage due to electrostatic discharge may result. Dummy sockets in unused DXBUS connectors should be left in place unless a new module is added to the system.

Whilst designed to resist water penetration, under extreme conditions moisture might enter the ClickToGo. Any spillage's over the ClickToGo should be wiped dry without delay. The ClickToGo may be used outdoors in light drizzle conditions but should be protected from rain.

Most electronic equipment is influenced by Radio Frequency Interference (RFI). Caution should be exercised with regard to the use of portable communications equipment in the area around such equipment. While the manufacturer has

made every effort to ensure that RFI does not cause problems, very strong signals could still cause a problem. If RFI causes erratic behavior, shut the wheelchair off immediately. Leave off while transmission is in progress.

In the event of a fault indicator flashing while driving (battery gauge and/or status LED), the user must ensure that the system is behaving normally. If not, the system must be turned off and a Service Agent called immediately.

Report any malfunctions immediately to your Service Agent.

Know the risks and limitations

Like any mechanical propelled vehicle there are certain risks involved.

The driver is responsible for any damage or injury that may occur to a party as a result of using a powered wheelchair. If the driver cannot assume responsibility due to age or disability then a carer must be present and be able to take over control either using a stop switch or a dual control in case of an emergency. You may wish to consider taking out insurance to cover any claims arising from such an incident.

The most sensitive part of a ClickToGo system is the driver's switch and the cable that connects it to the ClickToGo. The owner or carer must assume responsibility for regularly checking the integrity and positioning of the switch and cable and report any problems to the service agent immediately.

If a switch should malfunction or the switch cable becomes damaged, 1 of 2 things may happen. 1) If it malfunctions in an open circuit state, for example a clean cut of the cable, the chair will not function at all. 2) If it malfunctions in a closed circuit state, for example if the cable is shredded and the wires touch each other OR the switch becomes trapped in a closed position, the chair will enter drive mode and continue to drive until the carer or attendant takes control. A feature of the ClickToGo is an automatic stop time that can be set so that the chair will stop in this instance after a defined period of time. It is recommended to use this feature at all times.

Driving in a straight line is difficult using any switch driving control. The problem is that the user cannot make small left/right adjustments like a joystick user. It is possible to minimise the veer by using solid tires, a rear wheel-drive chair and fitting a ClickToGo Heading Lock device. However, it is not possible to totally eliminate veer as it depends on the surface conditions, the speed of the chair, the loading on the chair etc. As a rule of thumb if a chair veers to the left when driving on a good surface one way, but veers to the right when driving the other way, then the veer is minimised as much as it can be for that chair. On a good surface without a Heading Lock you should expect to notice the chair veering to one side or the other after a distance of 3-4 metres.

SECTION TWO

INSTALLATION, ADJUSTMENT & FAULT FINDING

1 Related Documentation

A DX based wheelchair control system may comprise between two and sixteen DX compatible modules depending on the application. Each DX compatible module has its own User Manual which describes the installation requirements of that particular module.

This manual describes the ClickToGo remote only and must therefore be read in conjunction with the:

- DX Power Module (PMB) Installation Manual
- DX Hand Held Programmer (HHP) Manual
- Dynamic Wizard Installation Sheet
- Installation Manuals for all other DX Modules to be used in your application.

2 Specifications

Electrical

Compatible with standard DXBUS	
Operating voltage range	18v – 32v d.c.
Charger rating	12A RMS continuous, limited by DXBUS rating.
Quiescent Current	<1mA Off, typically 250mA On

Mechanical

Weight	Approx 0.5 Kg
Mounting	As required by installer
Case material	Diecast aluminum, plastic coated.

Environmental

	Min	Max	Units
Operating ambient temperature range	-25	50	ºC
Storage temperature range	-25	70	ºC
Operating and storage humidity	0	90	%RH

The ClickToGo is designed to resist water penetration, but under extreme conditions moisture might enter the controls. Suitable for light precipitation.

Intended Use

The ClickToGo is designed to be used as an alternative input control for the Controls Dynamic DX Control System for Powered Wheelchairs.

The ClickToGo contains a DX UCM (User Control Module) and is therefore a Master Remote.

Warning ! In any DX System there can be only one master remote connected at any one time. The system will not function correctly if more than one Master Remote are connected.

The ClickToGo is compatible with the following DX power modules:

- DX-PM, DX-PM1, DX-PM2

The ClickToGo is compatible with the following Actuator modules:

- DX-CLAM, DX-TAM, DX-ARC5

The ClickToGo can be used in conjunction with any DX Secondary remote. The intended use of a secondary remote for this application would be to provide an attendant with joystick control at the rear of the wheelchair. A suitable DX secondary remote would be the DX-ACU1.

For compatibility with any other DX Module introduced by Controls Dynamic please contact Unique Perspectives.

The ClickToGo is intended to be operated by momentary single pole, single throw non-latching switches. The switches should be of high quality, professionally connected and regularly maintained. For details of wiring and connections see Chapter 3 of this section.

The ClickToGo is intended for use on Class A and B powered wheelchairs only.

The ClickToGo is not designed for use with any other control system.

3 Installation & Testing

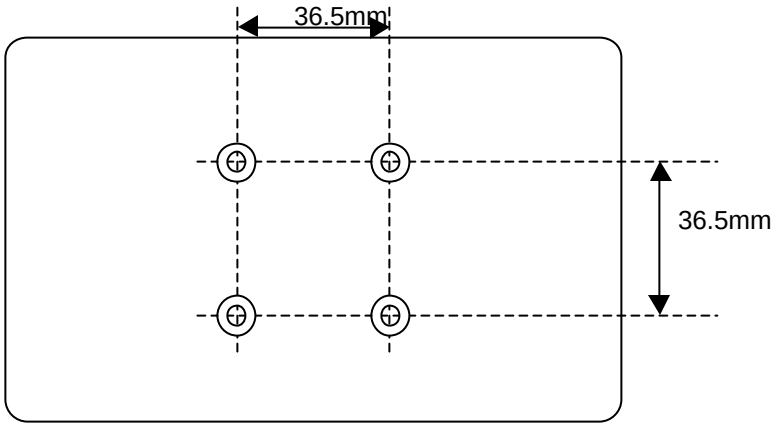
Mounting

The ClickToGo can be mounted on a goose neck arm or suitable mounting kit using M4 screws. The choice and construction of the mount will depend on the type of wheelchair and the user's needs. The choice, construction and installation of the mount should be carried out by a qualified technician or other professional.

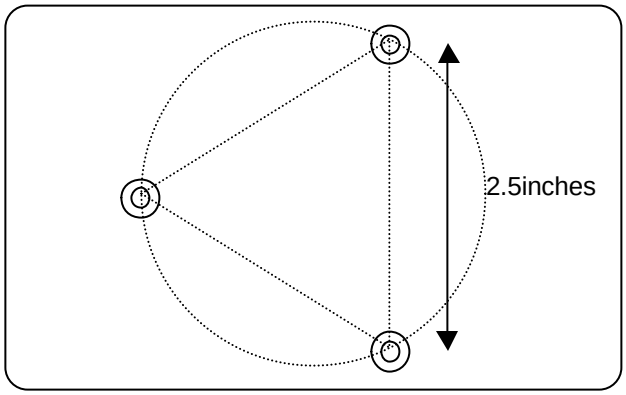
Warning !! For safe installation, select a screw length between 6mm and 10mm.

Dimensions of the mounting positions are shown below, both options are fitted to the ClickToGo:

Option A: Unique Perspectives ClickToGo Mounting Kit

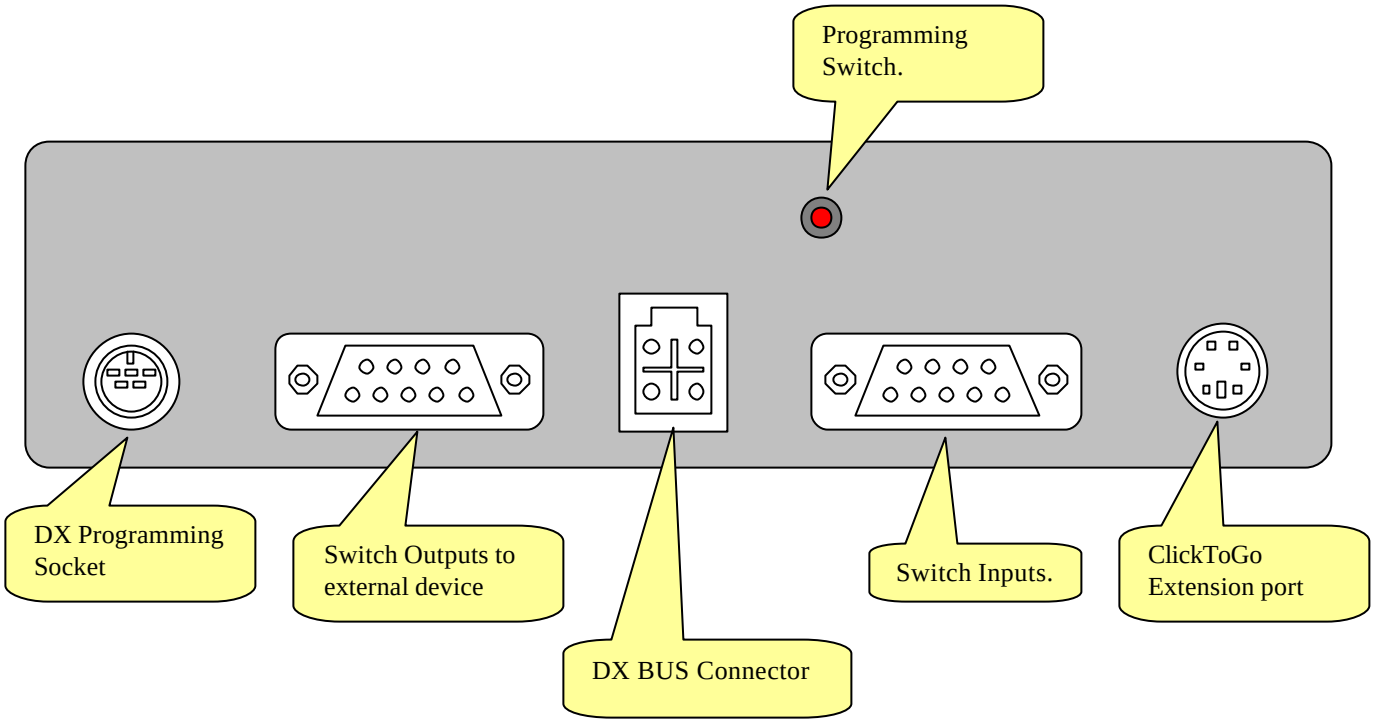


Option B: AbleNet Jellybean switch mounting plate



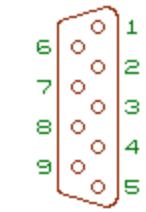
Connections

The connection panel is located at the bottom of the device and is illustrated below.



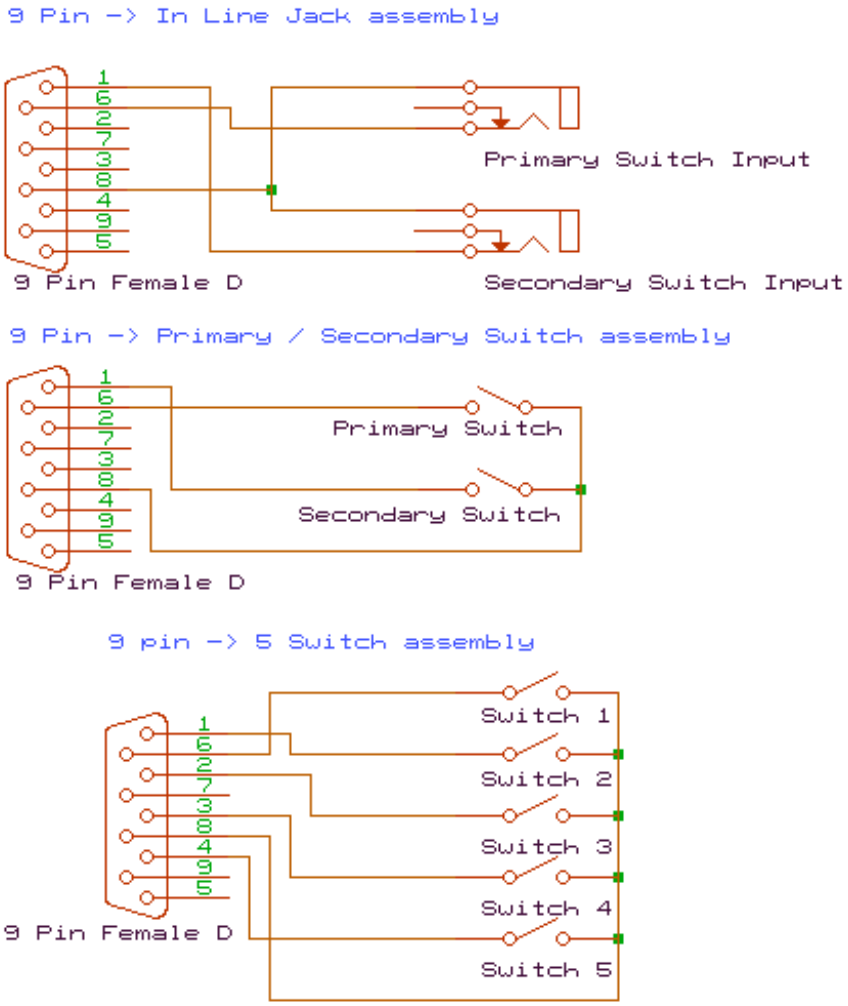
Switch Inputs

Switches inputs are provided on a 9 pin male D type connector located on the ClickToGo connector panel. The pin-out follows the standard set out by TASH inc. and is as follows:

Connector	Pin	Signal
9 Pin Male D  Male D Front View	1	Secondary Switch (Switch 2)
	2	Switch 3 (Reverse scan in Step scan mode)
	3	Switch 4 (Side Lights) *from serial no. 71 up
	4	Switch 5 (Drive Speed)
	5	
	6	Primary Switch (Switch 1)
	7	
	8	Switch common
	9	Emergency Stop

A 9 pin female D to four in line 3.5mm jack sockets is provided with the ClickToGo. The jack sockets are labeled ‘1’, ‘2’, ‘5’ and ‘S’. ‘1’ is the primary

switch, ‘2’ is the secondary switch, ‘5’ is the drive speed switch and ‘S’ is the emergency stop switch. Standard switches with 3.5mm plugs can plug into these inline sockets. This accessory is provided for evaluation purposes only. When the ClickToGo is supplied to a user their switches must be permanently wired into a 9 pin female D according to the schematics below. Furthermore the 9 pin D must be fitted with retaining screws which should be screwed into the retaining bolts on the ClickToGo.



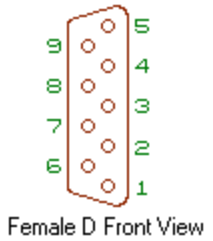
Warning!!

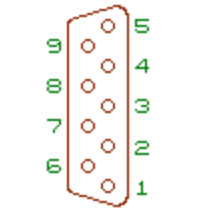
A user’s switches must be connected professionally to the ClickToGo by a qualified technician. Unique Perspectives accept no responsibility or liability for poorly made connections which may result in incorrect operation and possibly dangerous operation of the ClickToGo.

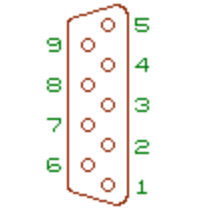
Under no condition should a latching switch be connected to the ClickToGo. Only use non-latching switches.

Switch Outputs

To connect the ClickToGo to an external device such as a communication aid or environmental control device five solid state relay contacts are provided on a 9 pin Female D connector. These contacts reflect the state of the switch inputs when external access mode has been selected by the user. The pinout depends on the external device setup.

Normal Setup, Environmental control and/or Communication aid.		
Connector	**Pin**	**Signal**
9 Pin Female D  Female D Front View	1	Environmental control – Switch 2
	2	Communication aid – Switch 1
	3	Communication aid – Switch 2
	4	
	5	
	6	Environmental control – Switch 1
	7	
	8	Switch common
	9	

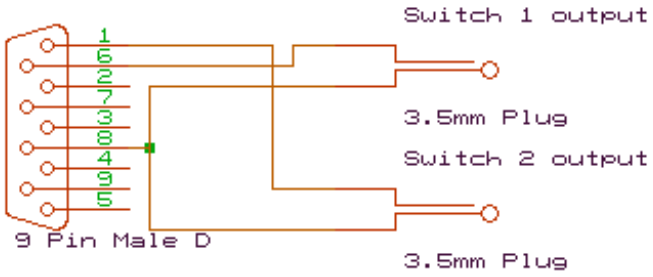
Single Shot Setup, e.g. TASH Talking Buddy.		
Connector	**Pin**	**Signal**
9 Pin Female D  Female D Front View	1	
	2	
	3	
	4	
	5	
	6	Taking Buddy Switch
	7	
	8	Switch common
	9	

Five Switch Setup.		
Connector	**Pin**	**Signal**
9 Pin Female D  Female D Front View	1	Switch 2 (Up/Forward)
	2	Switch 3 (Down/Backwards)
	3	Switch 4 (Left)
	4	Switch 5 (Right)
	5	
	6	Switch 1 (Select)
	7	
	8	Switch common
	9	

? *relays are current rated to 250ma*

? *contacts are isolated from wheelchair electronics*

Jack plugs must be wired into a 9 pin male D type connector according to the schematic below:



The 3.5mm plugs can then be connected into the switch inputs of the external device. If the external device already has a 9 pin D switch input wired to the TASH standard you can connect the ClickToGo to it using a single cable with D types on either end.

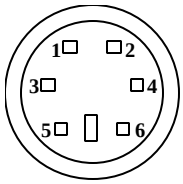
Interfacing to DynaVox communication aid.
The switch inputs of a DynaVox are peculiar in that they can not share a common signal. A special interface cable is required whose pin-out is described below and the ClickToGo parameter "External_Setup" must be set to "9".

ClickToGo Pin	Signal		DynaVox Pin	Signal
1	Switch 2	→	Jack 1, Tip	Switch 1 signal
2	Switch 3	→	Jack 2, Sleeve	Switch 2 common
3	Switch 4	→	Jack 2, Tip	Switch 2 signal
4	Switch 5			
5				
6	Switch 1	→	Jack 1, Sleeve	Switch 1 common
7				
8	Switch Common			
9				

Warning!! Unique Perspectives has tested the external access function with a number of external devices including products from Cambridge Adaptive Communication, GEWA AB, Toby-Churchill and the DynaVox range. Unique Perspectives cannot guarantee correct operation of other external devices. The relay contacts are solid state and current rated to 250ma. Although the relay connections are isolated extreme care must be taken when wiring to new products. Unique Perspectives accept no responsibility or liability for poorly made or incorrect connections which may result in incorrect operation and possibly dangerous operation of the ClickToGo and/or external device.

ClickToGo extension port

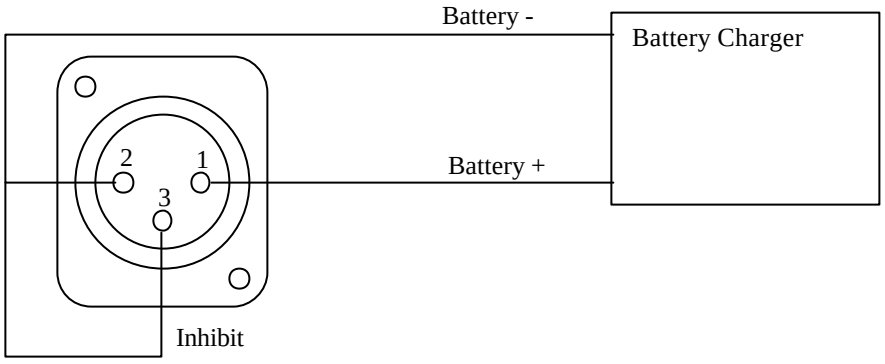
The ClickToGo extension port is used to connect to ClickToGo peripheral devices such as the Heading Lock. It can also be used as a direct connection for the emergency stop switch.

6 pin Mini DIN. Connector	Pin	Signal
	1	+5v
	2	Rx data
	3	Tx data
	4	
	5	0v (and Stop Switch common)
	6	Stop Switch i/p

WARNING: Under no condition should the power supply signals be used to power external electronics except those supplied and manufactured by Unique Perspectives Ltd.

Charger

The battery charger socket is a 3-pin XLR type with a pin configuration as shown below. Ensure that the charger used is compatible with this pin-out before connection.



Battery Charger Socket
Front View

Note: The inhibit is shorted to B- on the Battery Charger plug.

DX Programming Socket

The DX hand held programmer or DX Wizard cable plugs into this socket. This gives the programmer access to editing the parameters of the DX System to optimize wheelchair performance and drive characteristics.

DX BUS Cabling

The ClickToGo has one DXBUS connector which enables the ClickToGo to be connected to the DX system.

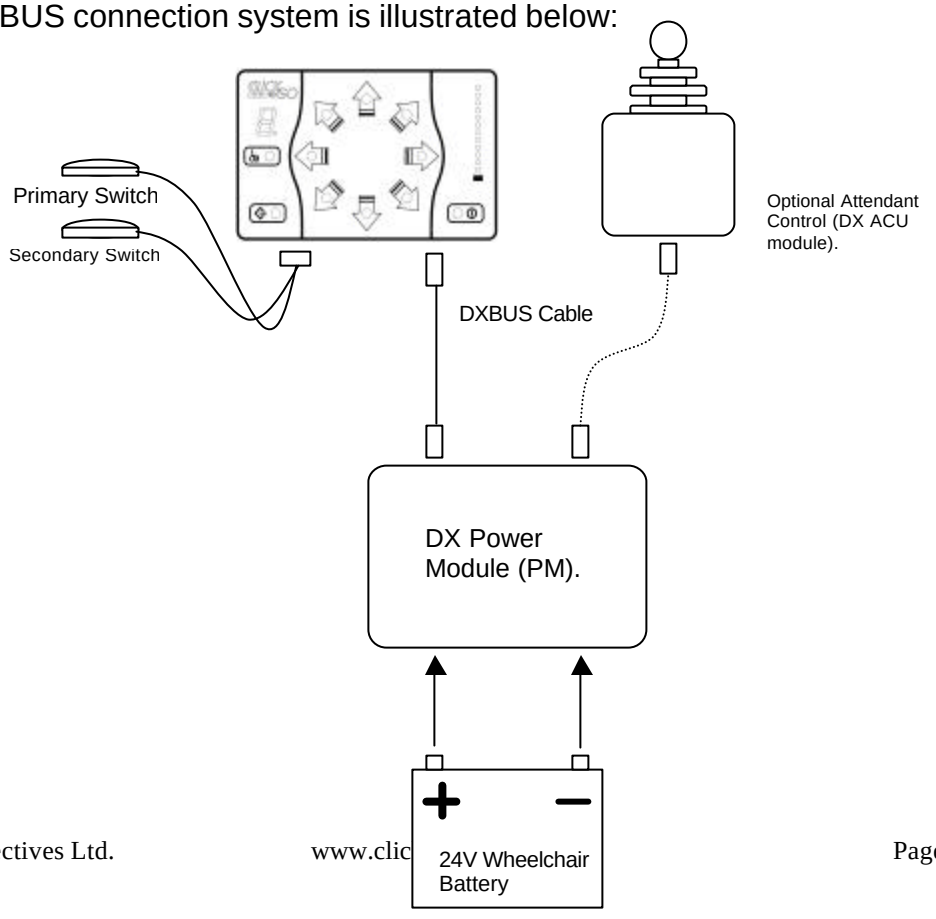
The ClickToGo will normally be connected directly to one of the two Power Module DXBUS connectors with a DXBUS cable.

The DXBUS cables are available in the following standard lengths

DXBUS Cable, Straight, 0.12M
DXBUS Cable, Straight, 0.3M
DXBUS Cable, Straight, 0.5M
DXBUS Cable, Straight, 1.0M
DXBUS Cable, Straight, 1.5M

The DXBUS cable length should be selected so that the cable is neatly attached to the wheelchair frame. The cable should never be loose and no possibility should exist for the cable to snag on the moving parts of the wheelchair, the person sitting in the wheelchair, and/or on items external to the wheelchair such as door handles etc.

A typical DXBUS connection system is illustrated below:



Testing

Ensure that all DX Modules used in the system and the ClickToGo have been installed as specified in their installation procedures. The ClickToGo needs to be correctly programmed for the appropriate wheelchair prior to testing. This is normally done by the supplier, see chapters 4 & 5 of this section.

A ClickToGo Remote contains the complete wheelchair system set up, from which all attached modules download their relevant information when the DX system is first turned on.

Powering Up

Power up the ClickToGo by pressing and releasing the primary switch.

Power Up Response

The power up response for the ClickToGo is:

- The On/Off LED will illuminate.
- The System Status LED will come on steady.

Note: The first time the ClickToGo is turned on, the System Status LED will flash a fault. This is because the ClickToGo must download its information to the DX Power Module. Turn the ClickToGo off, then on, to clear this fault.

- At least one of the LEDs on the Battery gauge will be on.
- If the ClickToGo is programmed for automatic scan mode (default as shipped) the scan of the eight directions will begin after a short moment.

ClickToGo Check Sequence

Perform the following ClickToGo check sequence:

1. When the  LED is illuminated press and release the primary switch. Confirm that the ClickToGo turns off. Turn on the ClickToGo again by pressing and releasing the primary switch.
2. When the Forward Arrow LED is illuminated press and hold the primary switch. Confirm that the ClickToGo drives in the forward direction. Release the primary switch to stop driving. Confirm the remaining 7 drive directions.
3. Program the required operating mode of the ClickToGo. See chapter 4 of this section. Confirm that the selected operating mode behaves as expected.

4. Perform the remainder of the tests as outlined in the testing sections of the installation manuals of all DX modules used on the wheelchair.

Identifying Seat Function

In seat function mode the LEDs of the ClickToGo take on a different meaning as illustrated in the table below.

LED	Actuator	Actuator*	Use
Forward	1 Up	1 Up	Tilt back rest forward
Forward Right	1 Down	1 Down	Tilt back rest back
Right	2 Up	2 Up	Tilt seat forward
Back Right	2 Down	2 Down	Tilt seat back
Back	3 Up	5 Up	Raise seat height
Back Left	3 Down	5 Down	Lower seat height
Left	4 Up	3&4 Up	Tilt foot rests forward
Forward Left	4 Down	3&4 Down	Tilt foot rests back

The Actuator* column is used when the Number_Of_Actuators parameter is set to 5

Depending on the make of wheelchair each actuator will be connected to a particular seat function. Therefore the 'Use' column may be different from that in the table above. In many cases there may be only two actuators fitted. Part of the installation procedure is to identify which seat function is activated by which LED.

To identify seat function

1. Enter seat function mode by pressing the primary switch when the  LED is illuminated (the ClickToGo parameter 'Chair_Function' must be set to 2 or 4 to include it in the scan. See page 42).

2. The 7 segment display will display a seat symbol and a clockwise scan of all eight LEDs will begin.

3. Press the primary switch when a particular arrow is illuminated and note down which seat function is activated. The 7 segment display will blink to indicate your selection and the decimal point will illuminate to confirm actuator activation.

4. Repeat step 3 for all eight arrows.

5. Exit seat function mode by pressing the primary switch when the  LED is illuminated.

Note: To be able to activate a particular actuator the corresponding DX system parameters 'Actuator Enable 1-5' must be set to Yes. See page 75.

4 Programming the ClickToGo

Warning !!
Incorrect or inappropriate programming of the ClickToGo can put the wheelchair into a dangerous state. Unique Perspectives accept no responsibility or liability for accidents caused by incorrect programming. This section must be read and understood before attempting to program the ClickToGo

Ensure that the programmed ClickToGo complies with all prevailing regulatory requirements for your country and application

Introduction

The performance of the ClickToGo, its operating mode and parameter settings may not be decided or known until the chair is supplied to the end user by their assessment center or other supplier. Typically the fine tuning of the ClickToGo will be carried out by a technician in collaboration with an occupational therapist during assessment of a users switch operation capability, very often in the user's home or place of work. It is for this reason that the programming of the ClickToGo's performance is carried out on the device itself without the need for a DX hand held programmer or a DX Wizard program.

The ClickToGo has a set of programmable parameters which allow a technician in collaboration with an occupational therapist or other professional to adjust the ClickToGo so that it best suits a user's needs and switch operation capability.

Standard Programs

A set of eight standard programs are selectable within the ClickToGo. These "sets" of parameters have been provided to allow a quick start to be made when fitting a ClickToGo. The parameters can then be further adjusted to "fine-tune" the ClickToGo to the user's needs. The standard programs and how to select them are described on page 59.

Programmable Parameters

Operation_Mode

This parameter selects the required operating mode.

Operation Mode = 1, single switch automatic scan.
Operation Mode = 2, single switch Short-Click scan.
Operation Mode = 3, two switch step scan.
Operation Mode = 4, 5 switch mode.
Operation Mode = 5, 3 switch mode. ***NEW TO REV H***

For more explanation of the operating modes refer to Chapter 3 'Operation' of Section 1 of this manual.

In Scanning Mode 1,2 or 3 switches are used to scan the LEDs of the ClickToGo and select drive function.

5 switch mode allows direct access to the drive directions. Pressing Switch 1 turns on and off the wheelchair. Switch 2 selects forward drive, Switch 3 selects reverse drive, Switch 4 selects Left, Switch 5 selects right.

3 switch mode allows direct access to left and right directions through Switch 4 and Switch 1. Pressing Switch 2 drives the chair forward, whilst pressing the same switch (i.e. Switch 2) twice drives the chair backwards. Switch 1 can also be used to switch modes by making short clicks whilst Switch 4 can also be used to power down. The switches are intended to be mounted in a head rest.

Scanning_Speed

This parameter allows adjustment of the scanning speed between ¼ second and 2 seconds. That is in automatic scan mode the LED will move on to the next one every x seconds where x is a value determined by the position of the pot.

In single switch Short-Click scan mode this parameter has a different function. It determines the length of time that the user must hold the primary switch before function is activated.

In 5 switch mode this parameter specifies the length of time that the primary switch must be held in order to switch between wheelchair control, external access and seat function. This is the "about 1½ seconds" referred to throughout this manual. The time can be set from ¾ second up to 6 seconds, but is approx. 1½ seconds at the default setting.

In 3 switch mode this parameter specifies the length of time between presses of Switch 2 required to drive the chair in reverse. It also specifies the length of time which distinguishes a short click (of switch 1 or 4) from a press and hold.

1 = scanning speed of 250ms (¼ second)
2 = scanning speed of 300ms
3 = scanning speed of 350ms
4 = scanning speed of 450ms
5 = scanning speed of 600ms (Default)
6 = scanning speed of 800ms
7 = scanning speed of 1.2seconds
8 = scanning speed of 2seconds

4_Way_Scan

This parameter has different function depending on whether the ClickToGo is in Scanning Mode or Joystick Mode.

In a Scanning mode, when selected, only the four LEDs, Forward, Right, Reverse and Left are scanned.

In 5 switch mode it is possible to drive the chair in 8 directions: Forward, Forward Right, Forward Left etc. When this parameter is selected it is only possible to drive the chair in four directions: Forward, Right, Reverse and Left.

This parameter does not apply to the 3 Switch Mode.

Dwell

The most often used drive directions are Forward, Forward Left and Forward Right. When this parameter is selected the Forward, Right and Left LEDs are scanned three times before including the Reverse LED.

This parameter does not apply to the 5 Switch Mode, 3 Switch Mode or Step Scan Mode.

Power_Off 

When selected the Power Led is included in the scan. This gives the user the ability to turn off the DX system by pressing the primary switch when the  LED is illuminated. In 3 Switch Mode a short click of the left hand switch (Switch 4) can be used to switch off the chair when this parameter is disabled.

This parameter does not apply to the 5 Switch Mode. In 5 Switch Mode the ClickToGo is turned off by pressing Switch 1.

Chair_Function 

This parameter can be set to 1 of 4 values:-
1 = no chair functions (default)
2 = seat function
3 = light function
4 = seat + light function.

You can set the number of seat functions by setting the Number_Of_Actuators parameter, see page 46. When both seat + light function are used the user presses the primary switch when the  LED is illuminated to enter seat

function. To enter light function the user presses and holds the primary switch until an “L” is displayed in the seven segment display.

To access seat function in five switch mode press and hold Switch 1. Release the switch when the  LED becomes illuminated. To operate lights keep holding the switch until the seven segment display displays an “L”.

To access seat function in three switch mode click the right hand switch (Switch 1). To access lights make a second short click.

External_Access 

When selected the External Access Led is included in the scan. This gives the user access to an external device such as a communication aid or environmental control. To choose external access the user presses the primary switch when the  LED is illuminated. The switches are then routed through the ClickToGo to the external device. To get back control of the wheelchair the user presses the primary switch for a certain amount of time (1-7seconds).

To access an external device in 5 switch mode press and hold Switch 1. Release the switch when the  LED becomes illuminated.

To access an external device in three switch mode make short clicks of the right hand switch (Switch 1) until the  LED becomes illuminated and an ‘E’ is displayed. The switches can then be used to control a connected external device.

Ignore_Back_Left_Right_Leds

Very often the Back Left and Back Right directions are rarely selected. To speed up scanning it is therefore possible to exclude them from the scan. When this parameter is selected the Back Left and Back Right LEDs are not included in the scan.

This parameter does not apply to the 5 Switch Mode or 3 Switch Mode.

This parameter does not apply when the 4_Way_Scan parameter is set.

Beep

When selected the internal speaker emits a beep each time a new LED is illuminated. The beginning of the scan is indicated by a longer than usual beep.

This parameter does not apply to the 5 Switch Mode.

Steering

This parameter can be set to 1 of 3 values:-
1 = no steering required
2 = secondary switch steering required
3 = primary & secondary switch steering required

When the forward direction LED is illuminated and the primary switch is pressed the wheelchair will be driving in a forward direction. With this parameter set to 2 or 3 the left and right LEDs are toggled.

By pressing the secondary switch the chair steers in the direction indicated by the illuminated LED. By releasing the secondary switch the chair drives straight again.

If this parameter is set to 3, the chair can be steered with one switch alone. When driving forward the left and right LEDs toggle. When the primary switch is released whichever left or right LED is on will remain on for a short period before returning to normal scanning. If the primary switch is pressed again within this period then the chair will steer in the direction indicated by the illuminated LED. The switch operation is equivalent to a short ‘unclick’. After steering, another short ‘unclick’ will return the driving direction to forward and the left and right LEDs will begin toggling again.

When the primary switch is released the chair will stop driving in the forward direction and normal scanning will resume. These features give the single switch user the possibility to steer their chair whilst driving without having to stop.

Note that if the Heading Lock is fitted the Left/Right LED correction indications are disabled when driving forward. This does not mean that the Heading Lock is not functioning. Displaying both the steering LED scan and the Heading Lock corrections would be confusing and unworkable.

This parameter does not apply to the 5 Switch Mode or 3 Switch Mode.

Reset_To_Forward

In Single switch Short-Click scan, or Two Switch Scan, the scanning of the arrows is controlled by the user. After a particular direction has been chosen, for example, Backwards, the user has to step scan around until the forward arrow is illuminated before going forward again. This can be frustrating.

When this parameter is set the scan automatically jumps to the Forward direction after the user has issued one step (i.e. one short click, or one click of the secondary switch) after having driven in a particular direction.

This parameter does not apply to the Automatic Scan Mode or the 5 Switch Mode or the 3 Switch Mode.

Wait_On_Forward

In Automatic Scan Mode after a user has driven in a particular direction the scan automatically begins from the Forward Arrow again. If the scanning speed is fast the user may not have time to press the primary switch.

When set the automatic scan waits on the forward arrow for twice the normal period.

This parameter only applied to the Automatic Scan Mode.

Enable_My_Pattern

The ClickToGo offers the unique possibility of creating your own scanning pattern. This is described later in this chapter.

After creating your own scanning pattern you must enable it by setting this parameter.

This parameter does not apply to the 5 Switch Mode or 3 Switch Mode.

Avoid_Accidental_Hits

Power Up
When set to 3 or 4 this parameter requires a user to hold the primary switch for 2 seconds before the ClickToGo will fully power up.

Automatic Scan Mode
In this mode accidental hits of the primary switch cause the scan to reset to the forward arrow. When set to 2 or 4 this parameter try's to avoid accidental switch presses by forcing the user to hold the switch for a short time.

When turning or reversing, the user may release the switch accidentally, thereby causing the scanner to reset to the forward direction. This parameter helps in this scenario also by allowing the user a short time within which to re-press the switch and continuing the turn or reverse.

The length of time to in both instances above is half the scanning speed. In otherwords if the scanning speed is every 1.2 seconds the 'short time' is 0.6 seconds.

NOTE: If you are using 2 switch scanning, i.e. Step Scan, it may be necessary to disable this parameter. This is because some users may misinterpret the delay when holding the switch, particularly the step switch, as a "weak" switch and use excessive force to activate it.

Heading Lock Sensitivity *NEW TO REV G*

If the Heading Lock is fitted to the ClickToGo this parameter can be used to set the amount of correction the Heading Lock applies to the wheelchair to keep it in a straight line. If the wheelchair is "wobbling" or "fish-tailing" from side to side too much correction is being applied and the parameter should be reduced.

Heading_Lock_Profiles

If the Heading Lock is fitted to the ClickToGo this parameter determines in which Drive Profiles the Heading Lock is enabled. When set to 1 the Heading Lock is enabled in all Drive Profiles from 1 to 5. When set to 2 the Heading Lock is enabled in all Drive Profiles from 2 to 5, but not Drive Profile 1. When set to 3 the Heading Lock is enabled in all Drive Profiles from 3 to 5, but not Drive Profiles 1 or 2, and so on. Default value for this parameter is 3.

Number_Of_Actuators

The ClickToGo can access up to five actuators. Each actuator has an up/down operation thus giving access to eight seat functions.

If your wheelchair does not have five actuators you may wish to ignore the LEDs in the scan which 'do nothing'.

Set this parameter equal to the number of actuators present on the chair to avoid scanning the unused LEDs. Refer to the table on page 39 to determine which LED activates which actuator.

This parameter does not apply to the 5 Switch Mode or 3 Switch Mode.

Power_Down_Timer

When set the ClickToGo will power the DX system down after 3 minutes of idle time. In other-words if the user does not press a switch for 3 minutes the chair will automatically turn off.

When external access is chosen the power down timer is disabled for that period.

Hide_Indicators

For some users the 7 segment display and the battery gauge may be confusing and/or distracting. When set this parameter turns off the Drive Profile and battery gauge indicators a few moments after power up. The indicators remain off unless:-

1. The Drive profile is changed (by pressing switch 5 for example) in which case the indicators come on for a moment.
2. A battery fault, in which case the battery gauge remains on and indicates the battery fault.

Automatic_Stop

When set the wheelchair will automatically stop driving after a period of continuous driving in one particular direction.

As a user rarely drives in one particular direction without making a steering adjustment it is recommended that this parameter is always set. In the event of a switch becoming fault or trapped in a user's clothing this parameter will stop the chair after the chosen period. See Safety and Misuse Warnings, Chapter 8. The period can be set to one of eight values:-

1 = automatic stop disabled
2 = 30 second stop time (default)
3 = 20 second stop time
4 = 10 second stop time
5 = 8 second stop time
6 = 6 second stop time
7 = 4 second stop time
8 = 2 second stop time (this setting is useful for teaching cause & effect)

User_Drive_Speed

When set the user can select the Drive Speed, sometimes called Drive Profile.

To select the Drive Speed the user must press and hold the primary switch when turning on the wheelchair. The ClickToGo enters a special mode in which the Drive Speed number changes while the primary switch is held. When the desired Drive Speed number is displayed in the 7-segment display the user releases the primary switch and normal operation resumes.

To aid adjustment in bright light conditions the direction LEDs are also used to indicate the Drive Speed number.

External_Setup

In a scanning mode there are 5 different kinds of external device setup. Setup 1 and 2 are for controlling a single external device such as an environmental control or a communication aid. Setup 3 and 4 are for controlling both an environmental control and a communication aid. Setup 5 is for controlling a single shot device such as a talking buddy button.

Setup 1 – Environmental Control
To choose environmental control the user presses the primary switch when the  LED is illuminated. The switches are then routed through the ClickToGo to the environmental control device and an 'E' is displayed in the 7 segment display. To get back control of the wheelchair the user presses the primary switch for about 6 seconds.

Setup 2 – Communication Aid
To choose communication aid the user presses the primary switch when the  LED is illuminated. The switches are then routed through the ClickToGo to the communication aid and a 'C' is displayed in the 7 segment display. To get back control of the wheelchair the user presses the primary switch for about 6 seconds.

Setup 3 – Environmental Control and Communication Aid
To choose environmental control the user presses the primary switch when the  LED is illuminated. The 7 segment display changes to an 'E'. To get back control of the wheelchair the user presses the primary switch for about 6 seconds.

To choose communication aid the user presses and holds the primary switch when the  LED is illuminated. The 7 segment display first changes to an 'E' and, as long as the switch is kept held, then to a 'C'. As before, to get back control of the wheelchair the user presses the primary switch for about 6 seconds.

Note that you can not switch from controlling an environmental control to a communication aid without first going back to wheelchair control.

Setup 4 – Communication Aid and Environmental Control.
Exactly the same as Setup 3 except that the order of selection is reversed.

Setup 5 – Single Shot device (E.g. TASH talking buddy).
This setup can be used to activate a single message device, like a TASH talking buddy. To activate the single message press the primary switch when the  LED is illuminated. This method is different from the others in that after selection the scanning continues as normal and the user does not have to hold the switch down in order to regain control of the chair.

Setup 6,7,8 – Advanced

The following setups enable a special scan of the first four LEDs and the  LED. When you choose an LED the corresponding relay output is activated. To return to driving press the primary switch when the  LED is illuminated. When any of these setups are chosen an 'A' is displayed in the 7 segment display indicating "Advanced".

Setup 6 – 4 Non Latching relay outputs
Setup 7 – 2 Non Latching & 2 Latching relay outputs
Setup 8 – 4 Latching relay outputs

Setup 9 – Advanced
This is a special setup when connecting to a DynaVox communication aid in two switch access mode.

The DynaVox is peculiar in that the switch inputs cannot share a common. A special cable is required whose pin-out is detailed on page 36.

If you are connecting to a DynaVox with only one switch cable you can use the standard interface cable.

NOTE: The setup you choose must match the wiring to the external device. See page 34 for wiring details.

Forward_Direction_Trim (Contact factory for details)

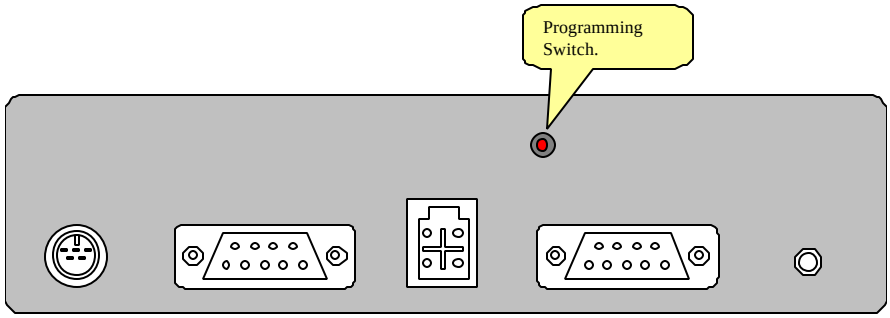
It is recommended to use the DX Veer Compensation parameter to adjust for any veer you may have in your chair. The Veer Compensation parameter can be adjusted using the DX Wizard or Hand Held Programmer. In some cases you may wish to adjust the veer from the ClickToGo. Contact Unique Perspectives for instruction. NOTE: **Setting this parameter DISABLES THE HEADING LOCK.**

Programming Mode

All programmable parameters can be adjusted on the ClickToGo itself without the need for a DX hand held programmer or a DX Wizard program.

To select the Programming Mode

1. Located at the bottom of the ClickToGo is a small hole through which you have access to the programming switch.



2. Connect the ClickToGo to a DX system or a +24v battery supply.

3. Connect the primary switch. If you want to adjust the forward direction trim you will have to connect all five switches or a TASH Inc pad.

4. Turn on the ClickToGo by pressing the primary switch.

5. Press and release the programming switch using a pencil or other suitable non-metallic object.

6. Program mode is indicated by a single Yellow LED flashing in the battery gauge.

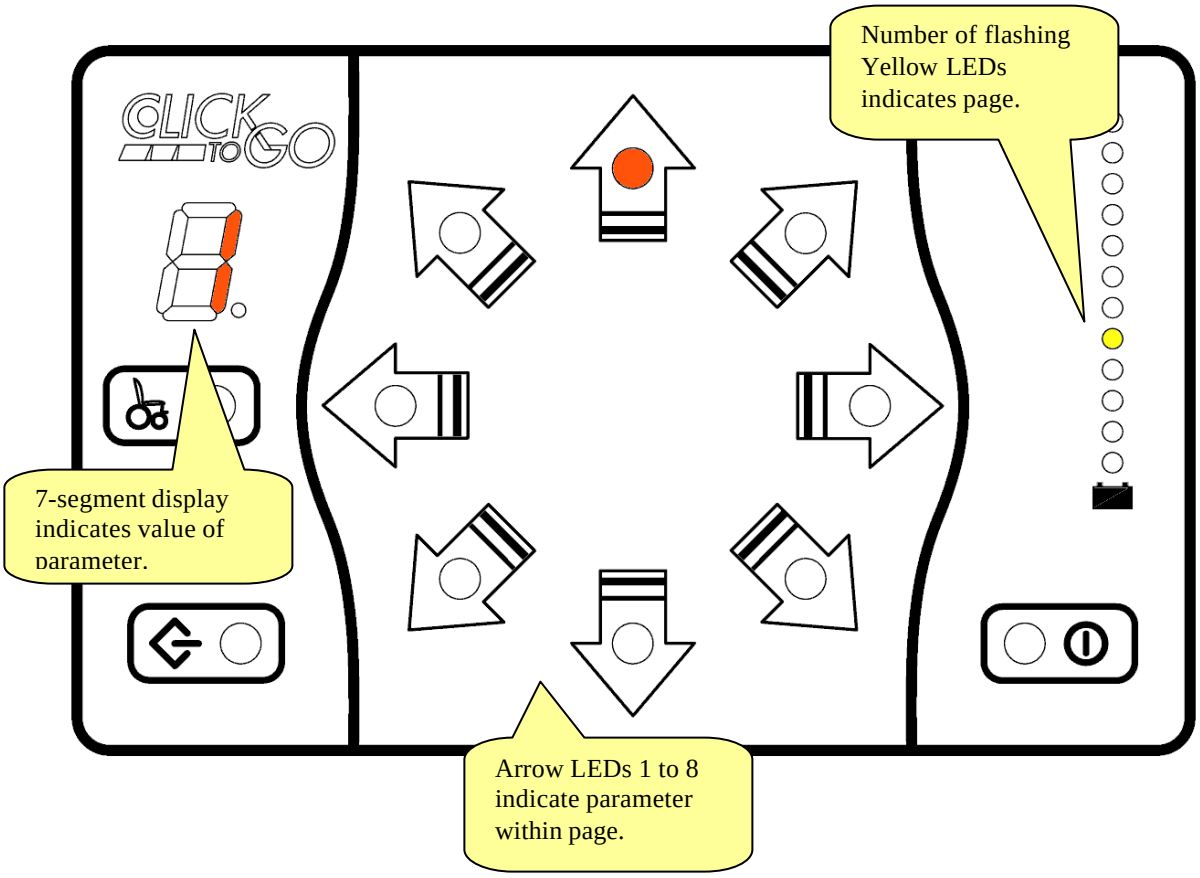
LED meaning in program mode, selecting a program page, finishing programming.

The parameters are divided into 4 separate groups or ‘pages’. The page is indicated by the number of flashing yellow LEDs in the battery gauge. One flashing yellow LED indicates page 1, two flashing LEDs indicates page 2 and so on. Program mode starts on page 1. To move on to the next page press the program switch again. To finish programming select the last page, page 4, and press the program switch.

The Arrow LEDs of the ClickToGo are used to indicate which parameter within a particular page is being adjusted. There are eight parameters in each page, with

the exception of page 4 which is especially for creating your own scanning pattern.

The 7-segment display indicates the value of a particular parameter. The parameter can be a number or a ‘Y’ or ‘N’ symbol.

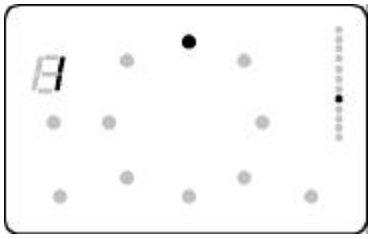
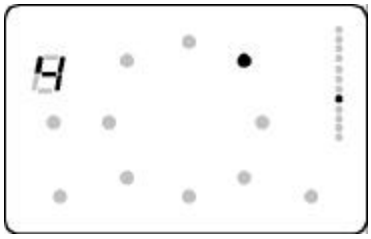
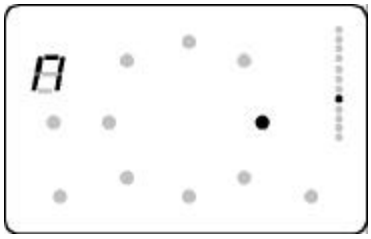
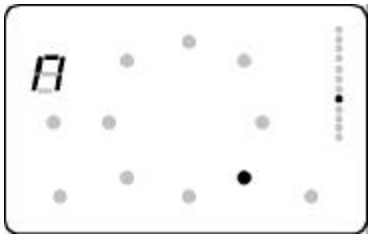
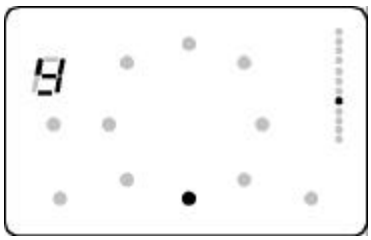


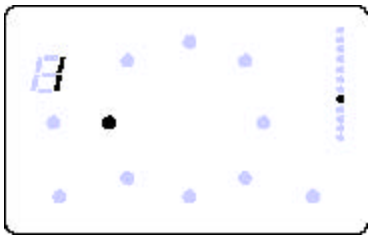
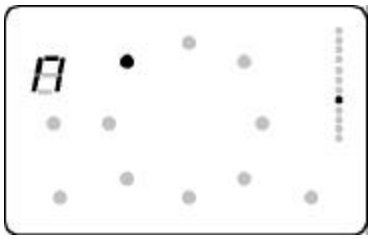
The primary switch is used to step from one parameter to the next and to change a parameter value. A short click of the primary switch selects the next parameter. A long hold of the primary switch changes the parameter value.

***Tip**: Before you enter program mode, look at the table of parameters and know beforehand what changes you want to make. Photocopy the ‘Quick Reference Guide’ at the end of this manual and by circling the options you have chosen you will have a record of your personalised settings.*

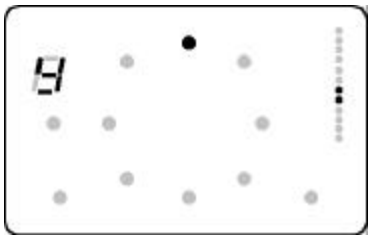
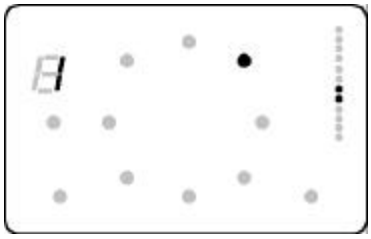
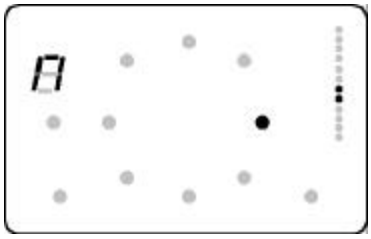
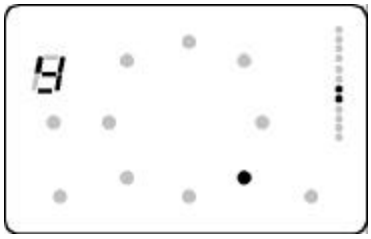
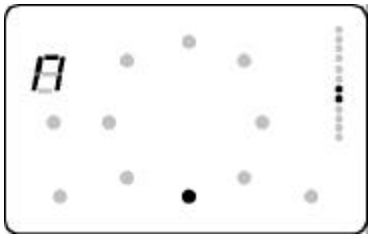
The tables on the following pages list the ClickToGo parameters.

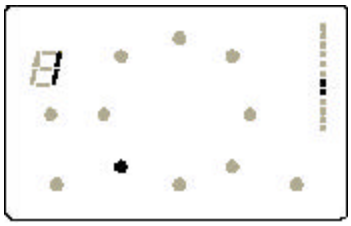
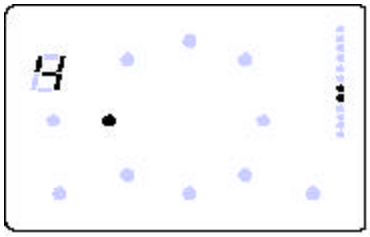
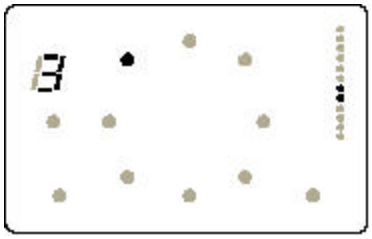
Parameter Adjustment Table – Page One

Parameter	Pattern	Value and meaning
Operation_Mode		1 = Automatic Scan 2 = Short-Click Scan 3 = Step Scan 4 = 5 Switch Mode 5 = 3 Switch Mode Default: Automatic Scan
Scanning_Speed		1 = 250ms, 2 = 300ms, 3 = 350ms, 4 = 450ms, 5 = 600ms, (Default) 6 = 800ms, 7 = 1.2sec, 8 = 2 sec
4_Way_Scan		N = not required Y = yes, 4 way scan required. Default: not required
Dwell		N = not required Y = yes, Dwell function is required Default: not required
Power_Off		N = not required Y = yes, Include Power Off LED in scan so that user can turn off the ClickToGo (in 3 Switch mode works in opposite sense) Default: Yes

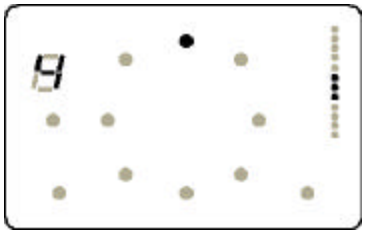
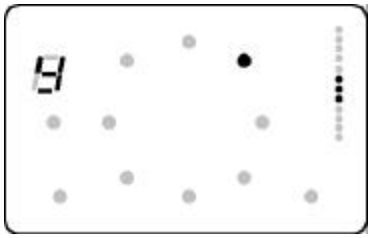
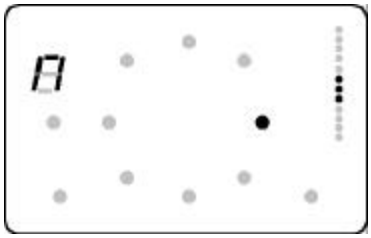
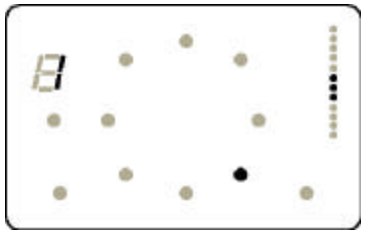
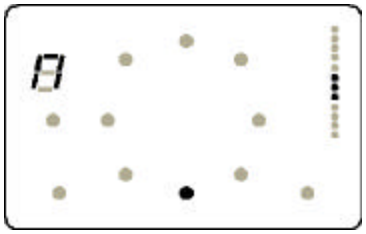
Chair_Function		1 = not required 2 = seat function 3 = light function 4 = seat + light function Default: 1 = not required
External_Access		1 = Not required (default) 2 = Yes, 1 sec exit time 3 = Yes, 2 sec exit time 4 = Yes, 3 sec exit time 5 = Yes, 4 sec exit time 6 = Yes, 5 sec exit time 7 = Yes, 6 sec exit time 8 = Yes, 7 sec exit time
Ignore_Back_Left_Right_ LEDs		N = no Y = yes, ignore back left and back right LEDs Default: not required

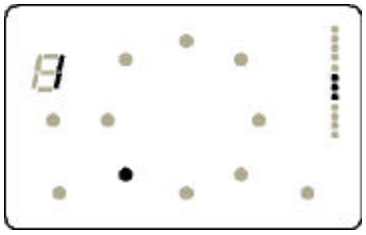
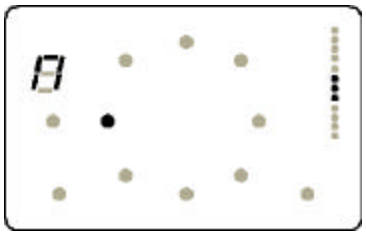
Parameter Adjustment Table – Page Two

Beep		N = not required Y = yes, audible beep is required Default: Yes, required.
Steering		1 = no steering required 2 = secondary switch steering required 3 = primary & secondary switch steering required Default: no steering
Reset_To_Forward		N = not required Y = yes, reset Arrow LED to forward after driving. Default: not required.
Wait_On_Forward		N = not required Y = yes, pause on the forward direction arrow. Default: Yes
Enable_My_Pattern		N = No, do not use my scanning pattern. Y = yes, do use my scanning pattern Default: No

Avoid_Accidental_Hits		1 = Not accidental hits are not avoided 2 = Yes, during scanning (default) 3 = Yes, during startup 4 = Yes, both
Heading_Lock_sensitivity		Can be set between 1 and 4. When set to 1 the Heading Lock applies a weak correction signal. When set to 4 the Heading Lock applies maximum correction signal. Default: 4
Heading_Lock_Profiles		Determines in which Drive Profiles the Heading Lock is enabled. For example when set to 3 the Heading Lock is enabled in Drive Profiles 3, 4 and 5. Default: 3

Parameter Adjustment Table – Page Three

Number_Of_Actuators		Set equal to the number of actuators fitted to the wheelchair if you want to avoid scanning unused seat function LEDs. Default: 4
Power_Down_Timer		N = not required Y = yes, power down after 3 minutes of idle time. Default: No, timer disabled.
Hide_Indicators		N = no Y = yes, the battery gauge and drive profile indicators are turned off. Default: no
Automatic_Stop		1 = disabled 2 = 30 seconds (Default) 3 = 20 seconds 4 = 10 seconds 5 = 8 seconds 6 = 6 seconds 7 = 4 seconds 8 = 2 seconds
User_Drive_Speed		N = no, the user cannot change the drive speed. Y = yes, the user can change the drive speed. Default: N

External_Setup		1=Environmental Control 2=Communication Aid 3=Both devices, 1 first 4=Both devices, 2 first 5=SingleShot device 6,7,8=Advanced (see text) 9=DynaVox Default: 1
Forward_Direction_Trim		N = not required Y = yes, adjust the forward direction trim now. Also disables Heading Lock signals. Default: not required

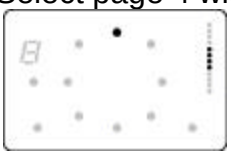
Creating Your Own Scanning Pattern

In certain situations the scanning patterns provided with the ClickToGo may not suit a particular user.

The ClickToGo program page 4 allows the technician to create a unique scanning pattern.

To create your own scanning pattern

1. Select page 4 within the program mode (four yellow LEDs flashing)



2. The illuminated LED indicates the first step of the scan (the forward LED by default).

3. Use short clicks of the primary switch to select the LED you want for this step.

4. When you have chosen press the primary switch for a long time, until your chosen LED blinks. The chosen LED for this step is stored and a new step begins.

5. Repeat from step 3 until you have entered all the steps of your pattern. Note that you can not exceed 20 steps.

6. When you have finished entering your pattern press and release the programming button. The steps are stored in the ClickToGo and normal operation resumes.

7. To enable your pattern you must re-enter program mode and change the parameter ‘Enable_My_Pattern’ from ‘N’ to ‘Y’.

Note:

- When you store the first step of a new scanning pattern the previous pattern is erased. In other-words you cannot edit a scanning pattern, just replace it.

- Most of the parameters on page 1 select options for the default clockwise scanning pattern. When you create your own pattern they no longer apply. The only page 1 parameters which apply in this case is the Operation_Mode and the Scanning_Speed.

Choosing a Standard Program & Resetting the ClickToGo

There are eight different standard programs selectable within the ClickToGo. These have been carefully chosen to suit the needs of a variety of different users and their function and application are described in the following pages.

The ClickToGo is shipped with Standard program 1 selected. These are the so called default values and are listed in the parameter adjustment tables on pages 52 to 56.

IMPORTANT
It is important to remember that the standard programs are examples. They make a good starting point when fitting a ClickToGo but effort should always be made to further “tweek” the parameters so that the ClickToGo is optimised to suit a particular user’s needs and abilities.

To choose a standard program

1. Make sure the ClickToGo is on.

2. Make sure the ClickToGo is not in program mode.

3. Press and hold the program switch until the seven segment display changes from a ‘-‘ to a ‘1’, about 3 seconds. Keep holding the program switch until the number of the standard program you require is displayed. Then release the program switch.

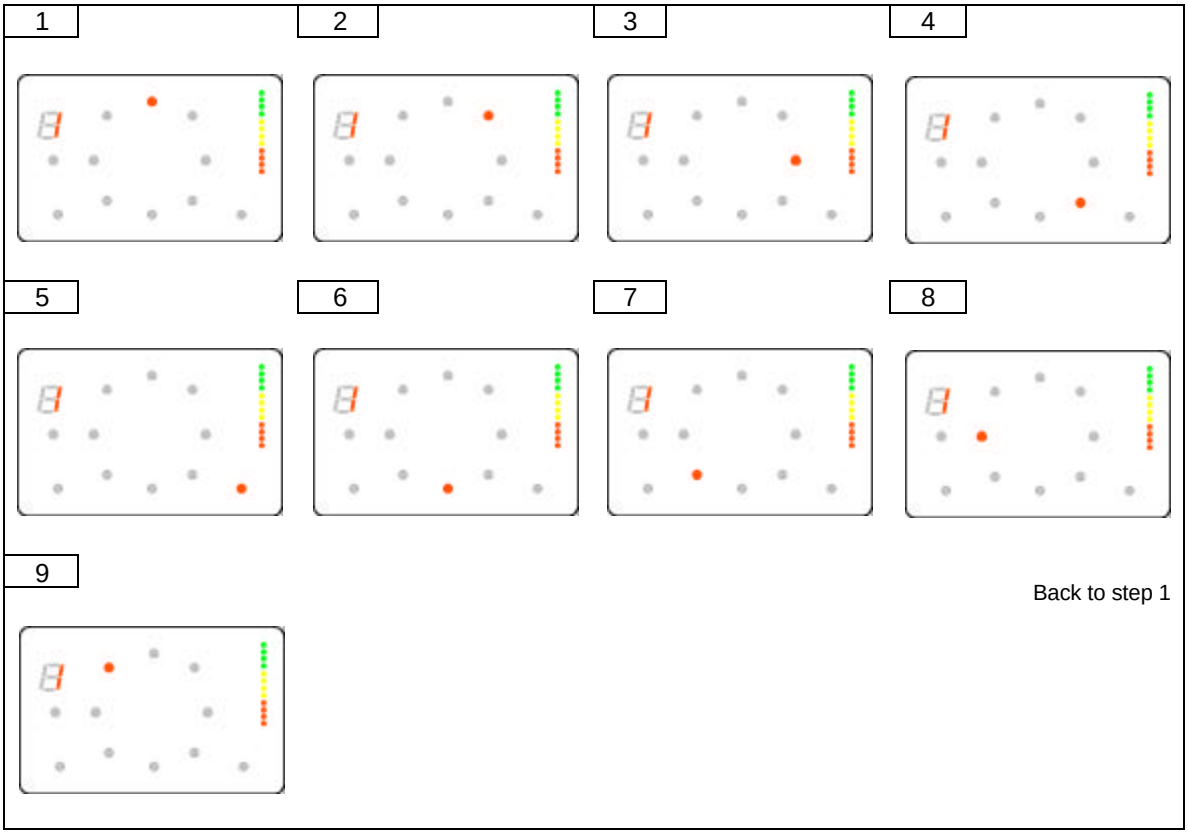
   Warning! Be careful not to enter page 1 of programming mode by releasing the program switch too early. You will know you are in page 1 of program mode as a single LED in the battery gauge will be flashing. If this happens simple exit program mode (see page 50) and try again, making sure that you hold the program switch firmly until the ‘-‘ sign changes to a ‘1’.

4. The  LED will flash rapidly as the parameters are set to the values for the selected program.

Note: Be absolutely sure about choosing a standard program. In effect you are resetting all the ClickToGo parameters to new values. If you have not written them down somewhere there is ‘no way back’.

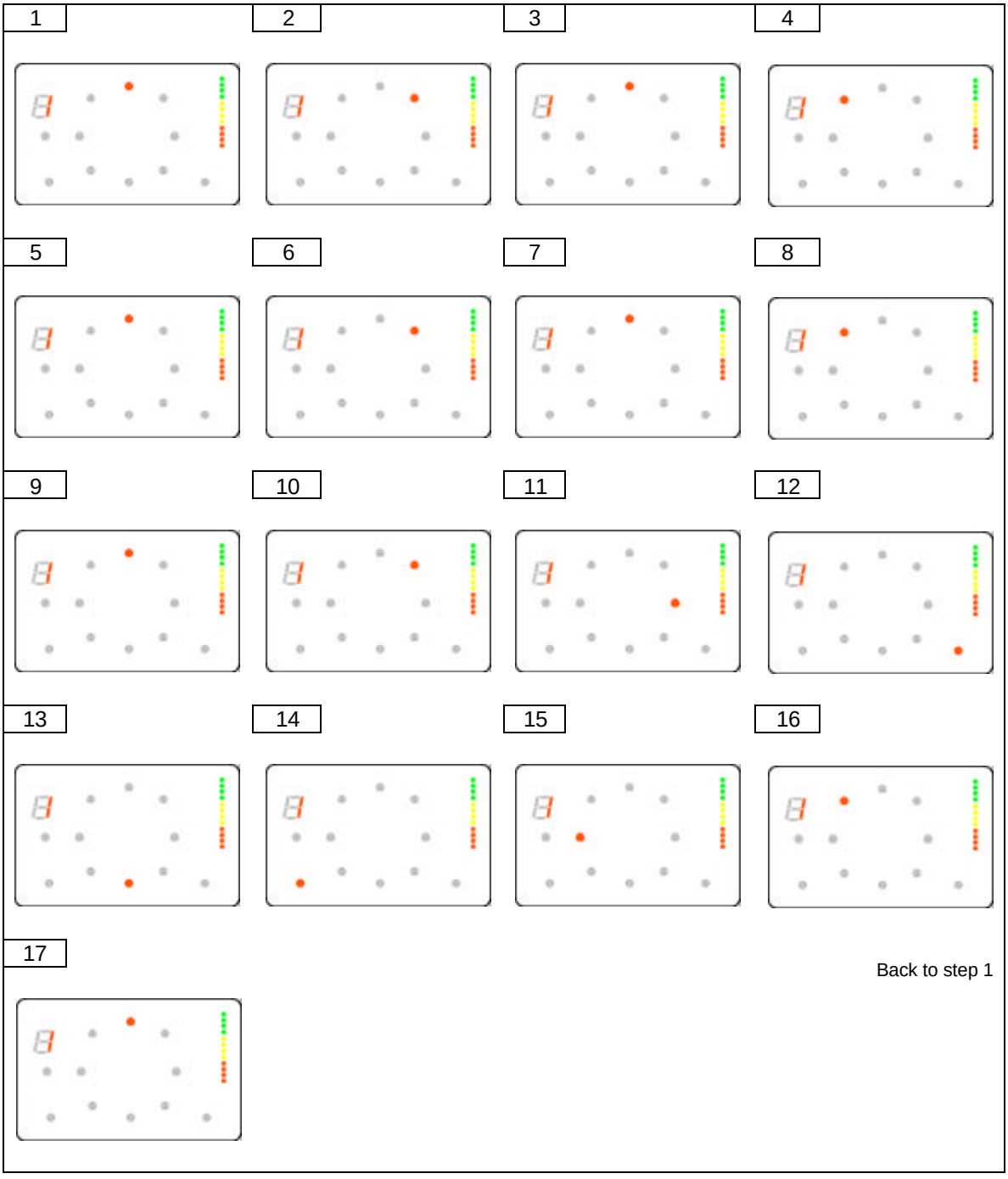
Standard Program Number 1

Single switch automatic scan of all eight directions and the power off LED at a slow scan speed with accidental hits avoided. This is the default scanning pattern and whilst cognitively is the easiest to understand it is not the most efficient in terms of accessing the most frequently used directions. However it is the pattern which most users start off with.



Standard Program Number 2

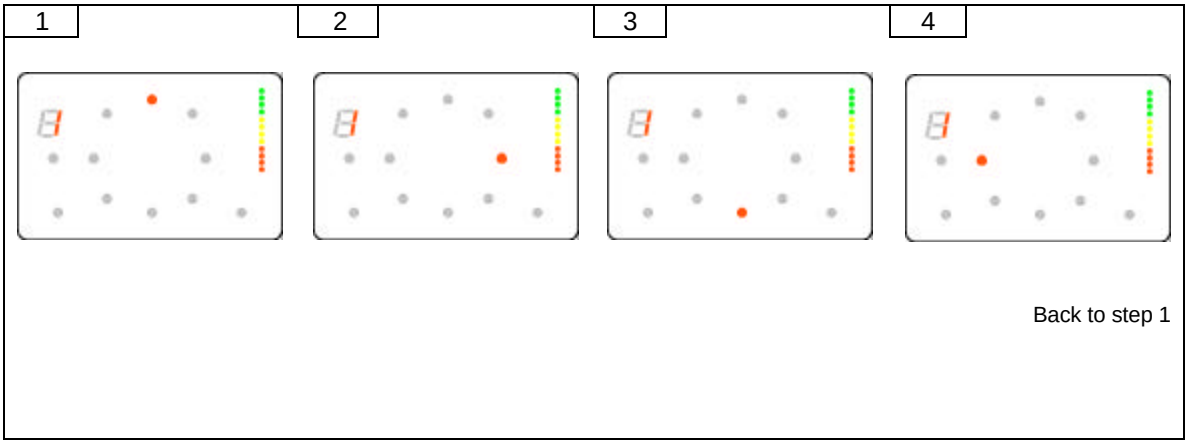
Another single switch automatic scan at a faster pace which is more efficient because it ignores the back left and back right LEDs and also scans the top 3 LEDs 2 times before scanning the rest, the so called Dwell parameter. In addition the external access is included in the scan to allow a user to switch control to a communication or environmental control device.



Standard Program Number 3

A very simple pattern of the 4 main directions with an automatic scan at a very slow speed. This program is a good starting point for a young single switch user who is being introduced to the ClickToGo for the first time. As the user becomes accustomed to the device individual parameters can be edited to improve performance, for example to change the scanning speed or change the method of scan to 2 switches etc.

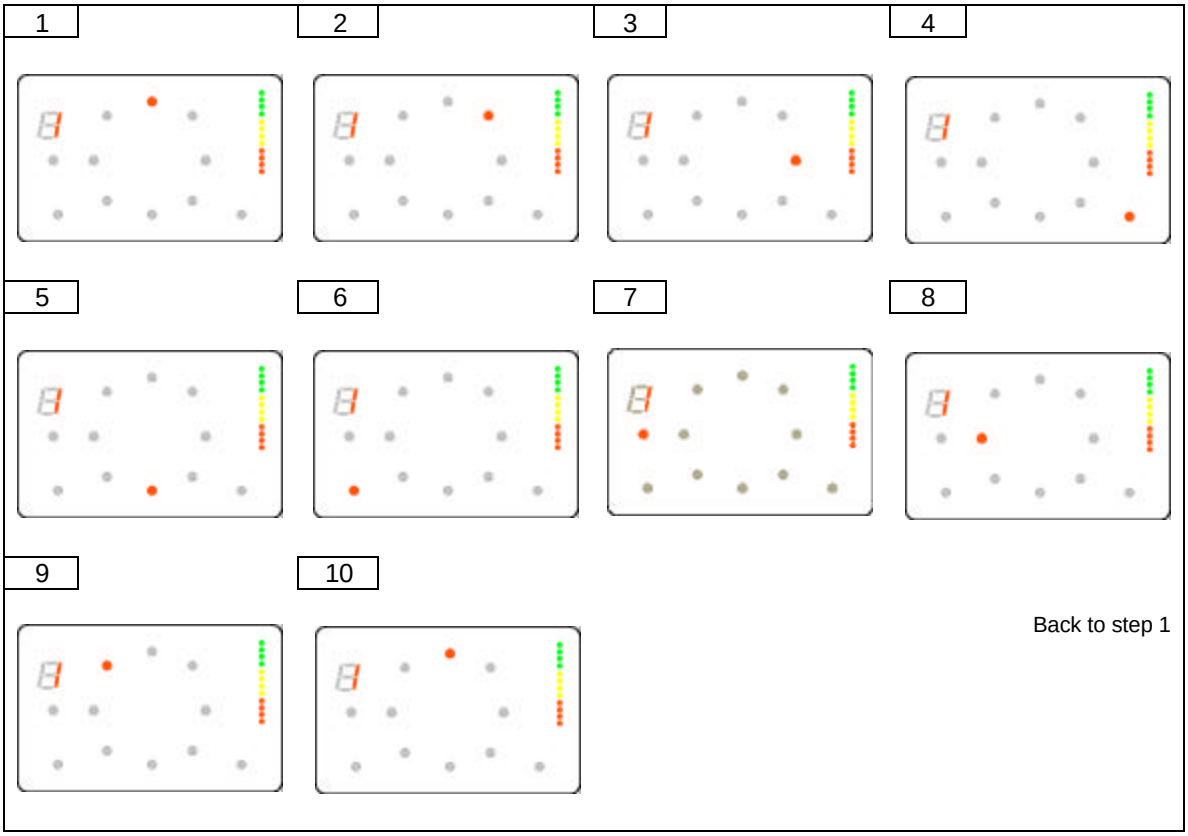
To make the display less confusing the Battery Gauge and Speed indicators have also been disabled (the Hide_Indicators parameter).



Standard Program Number 4

This program introduces the Short Click Scanning method. This method of scanning is the most efficient for a single switch user as they have control over both the scanning and driving with the one switch.

In this program, which is ideal for a person with a moderate cognitive level, the back left and back right LEDs are ignored whilst the external access and seat function LEDs are included. Control is given over 2 actuators in seat function mode and the user can switch to controlling an external device such as a communication aid. In addition the user can adjust the drive profile by holding the switch when the unit is first turned on and releasing it when the chosen speed is displayed.

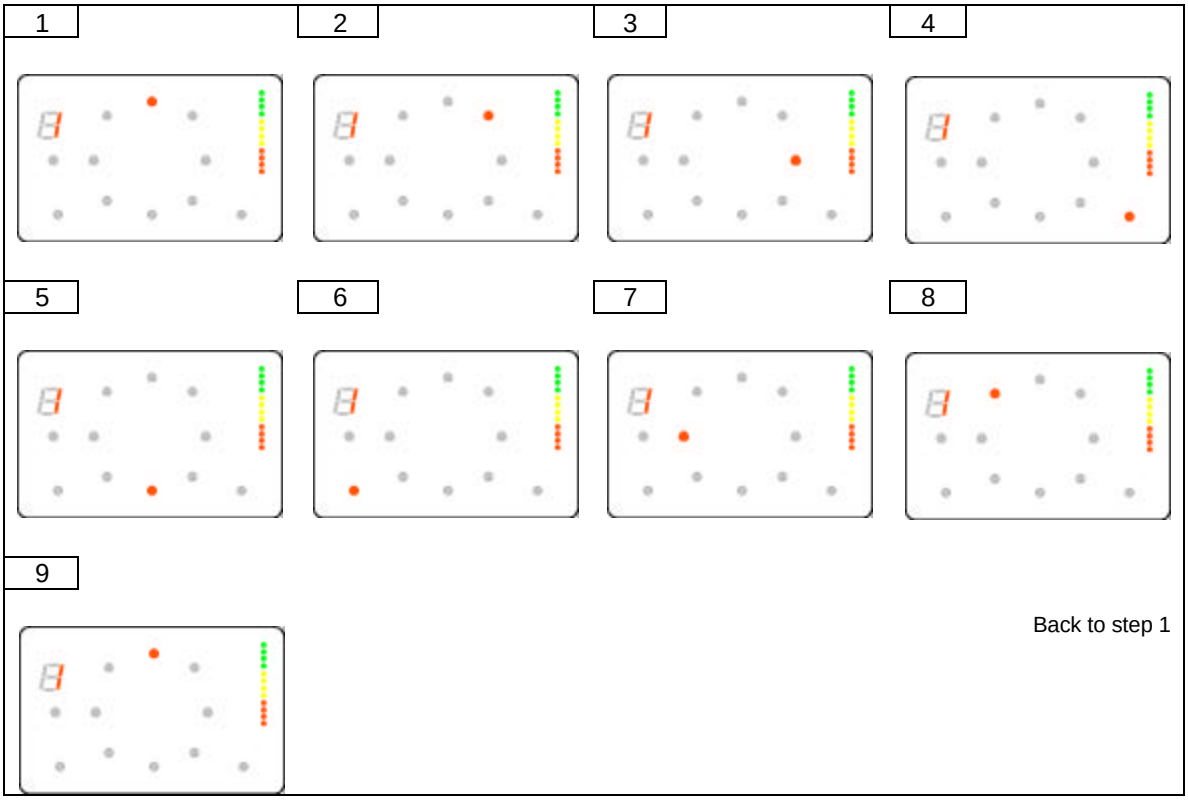


Standard Program Number 5

This program introduces the 2 Switch Scanning method, sometimes called Step Scan. Cognitively 2 switch scanning is the easiest to understand as 1 switch can be considered the accelerator and the other the steering wheel.

In this program the back left and back right LEDs are again ignored. The external access option is enabled giving 2 switch access to 1 or 2 external devices. In addition the user can adjust the drive profile by holding switch 1 when the unit is first turned on and releasing it when the chosen speed is displayed.

In this program the Avoid_Accidental_Hit parameter is disabled because if not properly understood it can cause a user to use excessive force when pressing switches (i.e. thinking it is a weak switch, rather than a delayed switch).

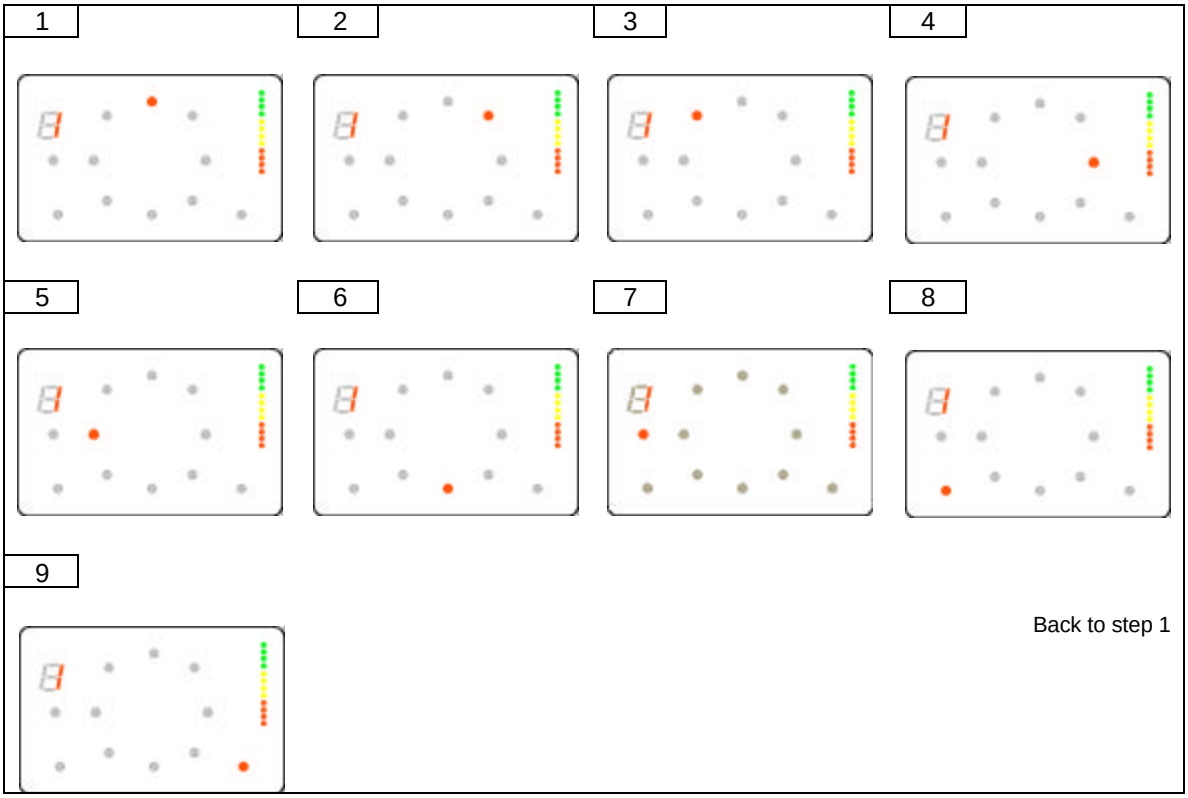


Standard Program Number 6

This program offers a completely different scanning pattern than the traditional clockwise pattern. In it a pattern has been created which allows equal time on the left and right hand directions. Whilst initially confusing the pattern is the most efficient to drive with and should be kept in mind as the ultimate operating method for a single switch ClickToGo user. (Note that the Enable_My_Pattern parameter is enabled in this program).

Short click scanning is used. Seat function is enabled with access to all five actuators. External access is also enabled for switching control to an external device. Driving speed can be selected on start-up (remember any of these parameters can be edited if desired, for example if the seat function is not required or if automatic scanning is preferable).

Finally this program also introduces the concept of steering with a single switch, the so called “Steering” parameter. When driving forward the left and right LEDs scan. If the user quickly releases their switch and presses it again the chair will steer in the direction of whichever LED was lit. If the user quickly releases their switch and presses it again the chair will drive forward again. After a little practice it is possible to steer the chair successfully through corridors and doorways without stopping.



Standard Program Number 7

This program demonstrates the ClickToGo 5 switch mode. In this mode the user has direct access to each of the driving directions. Single switches on a tray or a multiple switch such as the TASH wafer switch or penta switch can be used.

In addition seat function has been enabled. When the “On” switch (Switch 1) is pressed and held the ClickToGo will switch to seat function mode. Now the Forward and Back switches operate Actuator 1 whilst the Left and Right switches operate Actuator 2. To get back to driving the “On” switch is pressed and held until the ClickToGo switches back to driving mode.

Standard Program Number 8

This program demonstrates the ClickToGo 3 switch mode. This is a rather simple driving mode for a user who wishes to have simple control over their wheelchair with 3 switches, perhaps mounted on a tray or in a headrest.

Switch 1 is used to drive forward or backwards. Pressing once and holding the switch drives the chair forwards. Pressing twice and holding the switch drives the chair backwards. Switch 2 drives to the left. Switch 5 drives to the right.

If seat function is enabled (not in this example) three presses of Switch 1 puts the ClickToGo into seat function mode. In this mode Switch 2 and 5 can be used to control Actuator 1. To drive again simply press and hold Switch 1.

5 Programming the DX System

Note !!
The ClickToGo is a third party product manufactured by Unique Perspectives Ltd. The ClickToGo contains a DX User Control Module (UCM) whose programming is loosely based on the DX Dolphin remote. The following documentation applies to the ClickToGo and has been referenced from the DX Dolphin Remote manual.

Warning !!
Incorrect or inappropriate programming of the DX System can put the wheelchair into a dangerous state. Unique Perspectives accept no responsibility or liability for accidents caused by incorrect programming. This section must be read and understood before attempting to program the DX System

Ensure that the programmed DX System complies with all prevailing regulatory requirements for your country and application

Introduction

The driving performance of the DX system is dependant on its programming. Different features can be selected and parameters fine tuned for a particular application, or to suit the requirements of an individual.

The DX Remote, of which the ClickToGo is just one, and the DX Power module are the modules most responsible for defining the driving performance of the DX System. Software in the DX remote, processes user input according to a ‘Drive Program’ and sends direction and speed commands to the PM.

Note !!
This section only deals with programming the DX system for optimum wheelchair performance. For programming of the ClickToGo scanning operation refer to chapter 4 in this section.

Default Programs

The ClickToGo is programmed during manufacture with a set of factory default settings. The default settings programmed into a ClickToGo will not be suitable for all DX Power Modules or DX Systems and must be checked and reprogrammed prior to connecting to a DX System.

Programming Methods & Tools

Dynamic Wizard

The Wizard is a PC based tool suited to programming production runs of identical wheelchairs or modules, or individual highly customised wheelchairs. The Wizard is available from Dynamic Controls in several versions:

OEM	Generally used by the wheelchair manufacturer. Able to program a wide range of parameters
DEALER	Similar in function to above, but with a reduced range of programmable options. This ensures that options that the manufacturer wishes to keep control of cannot be disturbed. Parameters that may cause hazards or require special expertise to be set are not available to adjust.
ENHANCED DEALER	As above but with ability to edit parameters that relate directly to wheelchair accessories (e.g. actuators)
FACTORY	Can only replace Standard or Custom Wheelchair programs. No editing or diagnostics available.

Warning: The Wizard is a very powerful tool and as such requires well trained operators and a disciplined approach to usage and distribution

The DX Wizard Manual should be read and understood before attempting to use it.

Hand Held Programmer (HHP)

The DX Hand Held Programmer (HHP) is the normal programming tool used by dealers, allowing easy adjustment of all commonly adjusted Drive Program parameters.

Warning: The DX HHP is for use only by wheelchair manufacturers, their authorised dealers and support personnel. It is not for use by the wheelchair user.

The DX HHP manual should be read and understood before attempting to use it.

Downloading the correct DX wizard file

Every master remote contains a DX wizard file that specifies all the data required to safely operate the wheelchair in question. It is not possible to use a handset (or ClickToGo) from one type of wheelchair on another without first downloading the correct wizard file. For example a handset fitted to a Cruiser Plus will not drive a Storm and visa versa.

When you order a ClickToGo specify the type of wheelchair that you are connecting it to and the ClickToGo will be provided with the correct file already downloaded.

If you have already purchased a ClickToGo or wish to use one on another type of wheelchair contact technical@click2go.ie and we will email you the correct file if available.

If the correct file is not available there are 2 possible procedures for creating it and these are explained below.

Procedure 1: Copying the file from the original handset into the ClickToGo and editing it (Preferred).

Upload the wizard file from the existing Handset

1. Connect the DX Wizard dongle into the printer port and connect the DX serial cable from the serial port of your computer and insert it into the programming socket on the Handset. Turn on the handset.

2. Open the DX wizard program and choose “Read Wheelchair” from the “Wheelchair” option in the menu bar.

Edit the wizard file with ClickToGo specific options

3. Double click on “UCM Remote” in the program modules list.

4. Ensure that the following 7 parameters are set according to the table below:

Parameter	Value
Max Profile Number	5
Wrap Profiles	Yes
Change Prof Driving	Yes
Allow Non Driv Prof	Yes
Joystick Actuator	Yes
Sleep Enable	No
Lock Enable	No

Download the edited wizard file to the ClickToGo

5. Replace the existing handset with the ClickToGo and connect the DX serial cable to the programming socket underneath the unit.

6. Turn on the ClickToGo and download the edited file by choosing “Write Wheelchair” from the “Wheelchair” option in the menu bar.

7. After download is complete turn off and on the ClickToGo to complete the process and confirm that the ClickToGo is driving the wheelchair and that items can be selected from the menu.

NOTE 1: You must have a Wizard program with OEM options in order to edit the above parameters. If you do not email your wizard file to technical@click2go.ie and we will do the changes for you.

NOTE 2: If the original handset has a Rev A or older UCM module you will be prompted to convert the file to a Rev C version when you try to download it to the ClickToGo. In this instance we recommend you use procedure 2 below or contact technical@click2go.ie and we will do the conversion for you.

Procedure 2: Editing the file in the ClickToGo to match the original handset

Upload the wizard file from the existing Handset

1. Connect the DX Wizard dongle into the printer port and connect the DX serial cable from the serial port of your computer and insert it into the programming socket on the Handset. Turn on the handset.

2. Open the DX wizard program and choose “Read Wheelchair” from the “Wheelchair” option in the menu bar.

3. Print out the wizard file.

Upload the wizard file from the ClickToGo and edit it

4. Connect the DX serial cable from the serial port of your computer and insert it into the programming socket on the ClickToGo. Turn on the ClickToGo.

5. Open the DX wizard program and choose “Read Wheelchair” from the “Wheelchair” option in the menu bar.

6. Double click on “Power Module” in the program modules list. Edit all the parameters to match those on the print out.

7. Double click on “UCM Remote” in the program modules list. Edit all the parameters to match those on the print out except those listed in the table below which should already be set to the values shown.

Parameter	Value
Max Profile Number	5
Wrap Profiles	Yes
Change Prof Driving	Yes
Allow Non Driv Prof	Yes
Joystick Actuator	Yes
Sleep Enable	No
Lock Enable	No

8. Turn on the ClickToGo and download the edited file by choosing “Write Wheelchair” from the “Wheelchair” option in the menu bar.

9. After download is complete turn off and on the ClickToGo to complete the process and confirm that the ClickToGo is driving the wheelchair and that items can be selected from the menu.

NOTE 1: You must have a Wizard program with OEM options in order to edit the above parameters. If you do not email your wizard file to technical@click2go.ie and we will do the changes for you.

Auto Download

The DX System has a feature called Auto Download. It is designed to minimise the programming requirements associated with Module servicing by down loading the correct programming to a replacement DX Module.

Auto Download is achieved by DX remotes containing both their own programming and also a backup copy of the programmed data for all other DX Modules in the system. When a module is swapped, or a check sum error found in a module, the DX Remote automatically down loads its backup copy to the module. The Auto down load occurs immediately on power up after the module has been replaced. This applies to all DX modules **except** a DX remote. I.e. When you replace a ClickToGo it will need re-programmimg.

Warning!!

When a ClickToGo is replaced it will perform an Auto Down load to all DX modules. This may result in incorrect and dangerous programming for a particular wheelchair system if the wheelchair program installed in the ClickToGo is not suitable for that wheelchair system.

Do not attempt to drive or test the DX system before the correct and suitable wheelchair program has been installed in the ClickToGo using the Wizard.

After replacing any DX Module, turn the DX System off, then on again, to initiate the Auto down load of the DX Remote backup data. When a Auto Down load has occurred the status LED of the replaced module will flash. Turn the system off and them on again to clear this fault and complete the Auto Down load.

6 Battery Warnings, Diagnostics and Fault Finding

Battery Condition Warnings

A battery warning is shown by the battery gauge flashing its LEDs.

Battery high warning condition

This condition occurs when the battery voltage exceeds 28V, as measured by the PM. The cause can be:

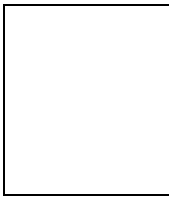
- The wheelchair is still on charge and the batteries are full or faulty
- The batteries are overcharged
- The wheelchair is travelling down a slope and the batteries are full or faulty

The wheelchair will drive during this fault condition which will reset automatically when the battery voltage drops below 28v.

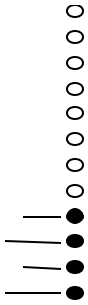
Battery Low warning condition

This condition occurs when the battery voltage drops below 23.3V, when the wheelchair is still.

The cause can be:



If the battery gauge flashes with orange or green LEDs lit, but the cause is not due to a battery high fault, the battery or battery wiring may be faulty.



If the battery gauge flashes with just the 3 or four red LEDs lit after stopping the chair, the battery may be too small for the wheelchair type, or the battery may be old or damaged.

A battery low warning normally coincides with a low capacity warning.

Low capacity warning condition

When the calculated available battery capacity drops below 10% of full capacity the two left most red LEDs flash.

The wheelchair will drive during this fault condition but it shows that the battery is in the reserve capacity range and battery capacity will begin to reduce very rapidly. The low capacity warning will not stop until the batteries have been recharged adequately.

Diagnostics and Fault Finding

DX System diagnostics can be examined from two platforms : from the Flash Codes signaled with the system status LED on the ClickToGo (and on the HHP and from the Wizard which can provide more detailed information about the fault.

Flash Code

Any fault condition on the DX system will cause the ClickToGo's system status LED to flash. Flashing occurs in burst of flashes separated by a two second pause. The number of flashes in each burst is referred to as the Flash Code and indicates the nature of the fault. The title of the Flash Code fault is also displayed by the HHP if connected to the faulty wheelchair.

Faults that affect the safety of the chair will cause the chair to stop while less critical ones will be indicated but allow the chair to continue driving. Some faults will automatically clear when the fault condition is removed, in which case the System Status LED will extinguish. Other faults are latched and must be cleared by turning the DX System off, waiting for two seconds, and then turning it back on again.

DX System Status LED Flash Code	Likely cause of condition and possible action
1	**DX Module Fault (see limp Mode below)**
	Cause An auto download has occurred
	Action ✍ Turn the ClickToGo off then on again.
	Cause The DX System is not correctly programmed.
	Action ✍ Try reprogramming the DX System
	Cause Connection between DX Modules may be faulty, or there may be an internal fault in a Module.

Action
- ✍ Check DXBUS connections and replace if necessary
- ✍ If the Status LED on another Module is flashing, replace the Module
- ✍ An expected module may not be present (e.g. the Actuator Module)

2 **DX Accessory Fault**

Cause There is a fault in an accessory device attached to a DX Module (excluding the PM). Examples of faults in accessory devices may be: the clutch is, or has been, disengaged; a light bulb is short or open circuit; an actuator terminal is shorted to Battery +

Action
- ✍ Check all accessory devices connected to your DX System

3 **Left (M1) Motor Fault**

Cause The connection from the PM Left (M1) connector to its associated motor, or the motor itself, is defective. The connection is either open or short circuit.

Action
- ✍ Disconnect the left motor plug and check continuity between the motor pins on M1

4 **Right (M2) Motor Fault**

Cause The connection from the PM Right (M2) connector to its associated motor, or the motor itself, is defective. The connection is either open or short circuit.

Action
- ✍ Disconnect the right motor plug and check continuity between the motor pins on M2

5 **Left (M1) Park Brake Fault**

Cause The M1 plug connection to its associated park brake is either open or short circuit

Action
- ✍ Disconnect the M1 plug and check continuity between the two positronic park brake pins

6 **Right (M2) Park Brake Fault**

Cause The M2 plug connection to its associated park brake is either open or short circuit

Action
- ✍ Disconnect the M2 plug and check continuity between the two positronic park brake pins

7 **Low Battery Fault**

Cause The battery charge is not sufficient to allow safe driving. It has fallen below 17V

Action
- ✍ Check the battery connection and terminals. The battery voltage should be similar when the battery is on charge, and when it isn't.
- ✍ Check that fuses have not blown, or circuit breakers tripped.
- ✍ Replace battery if worn out or if capacity is insufficient for the user's needs.

Note: The wheelchair will behave sluggishly and the Battery Gauge will flash indicating low battery voltage prior to this fault.

8 **Overvoltage Fault**

Cause The battery voltage has exceeded 32V

Action
- ✍ If this fault occurs during battery charging, the battery charger is defective or incorrectly adjusted.
- ✍ Check the battery chargers open circuit voltage is in accordance with the battery manufacturers limits, and is less than 32V

Cause The battery connector is making intermittent contact when the wheelchair is stopped, or travelling down a slope.

Action
- ✍ Check that the battery wiring and terminating is secure.

9 **CANL Fault (see limp mode)**

Cause
1. An invalid voltage has been detected on the DXBUS CANL line.
2. Communication is not possible using the CANL wire.

Action
- ✍ Check the continuity of the DXBUS cable
- ✍ Check for shorts between the DXBUS pins. An open or short circuit on another DX Module can cause this fault.

10 **CANH Fault (see limp mode)**

Cause
1. An invalid voltage has been detected on the DXBUS CANH line.
2. Communication is not possible using the CANH wire, or the CANJ and CANL wires are shorted together.
3. Hazard lights were turned on when the DX system was turned on.
4. The CANH is used to generate a Kill signal by any DX Module which detects and unsafe condition, or by an external device such as an emergency stop switch. The CANH wire is pulled to either Battery + or Battery – and causes the DX System to shut down.

Action
- ✍ Check continuity of the DXBUS cable.
- ✍ Check for shorts between the DXBUS pins. An open or short circuit on another DX Modules can cause this fault.
- ✍ If the hazard lights were already switched on when the DX system was turned on, Flash code 10 and limp Mode may result. To clear this fault, turn the Hazard lights off, then turn the DX System off then on again.
- ✍ If generated by a Kill signal, the cause of the fault is severe.

11 **Stall Timeout Fault**

Cause: The motor current has been at, or close to, current limit for longer than the Stall Timeout parameter value.

Action
- ✍ Turn the DX System off then on again.

12 **Module Mismatch**

Cause: There is a compatibility problem between DX Modules in the system. The wheelchair will be disabled.

Action
- ✍ Consult your Dynamic service center.

Cause: The data held by the DX UCM for another DX Module is corrupt or incompatible with that module

Action
- ✍ Reprogramming the wheelchair system may correct this problem.

Limp Mode

If the DX System detects some faults, it will revert to Limp Mode. This is a reduced speed mode which recognises problems, but allows the wheelchair user to limp home, where the problem can be assessed.

7 Maintenance

1. The ClickToGo system should be regularly checked for integrity. Loose, damaged or corroded connectors or terminals, or damaged cabling should be reported to your Service Centre and be replaced immediately.

2. The cabling of ClickToGo System including Switch cables, DXBUS cables and Battery cables, should be regularly checked for integrity. They should never be loose. Cables should be neatly attached to the wheelchair frame and mounts so that no possibility exists for a cable to become snagged on the moving parts of the wheelchair itself, the person sitting in the wheelchair, and/or items external to the wheelchair such as door handles etc.

3. All switches connected to the ClickToGo should be regularly tested to ensure that they function correctly.

4. During storage and transport of your wheelchair ensure that there is no possibility that the primary switch can inadvertently by pressed thereby causing the chair to turn on and possible enter a drive state. Always disengage the motor gears and, if possible disconnect the primary switch.

5. Under no condition should a latching switch be connected to the ClickToGo. Only connect non-latching switches.

6. The ClickToGo components and other wheelchair parts should be kept free of dust, dirt and liquids. If necessary wipe with a cloth dampened with warm water or alcohol. **Do not** use solvents or abrasive cleaners.

7. Where any doubt exists, consult your nearest Service Centre or Agent.

8. There are no user-serviceable parts within the ClickToGo. Do not attempt to open the case.

9. In accordance with the requirements of CE marking of this device and the Company's policy, it is requested that re-occurring faults or defects are reported back to Unique Perspectives Ltd.

Warning !! If the ClickToGo is damaged in any way, or if internal damage may have occurred (for example by being dropped), have it checked by qualified personnel before operating.

8 Safety and Misuse Warnings

Do not install, maintain or operate this equipment without reading, understanding and following the proper instructions and manuals, otherwise injury or damage may result.

The completed installation must be thoroughly checked, and all programmable options must be correctly adjusted for safe operation prior to use.

A warning must be conveyed to the wheelchair operator that the controller could cause the chair to come to a sudden stop. In situations where this may affect the safety of the user, this will require the fitting and wearing of a seat belt.

Performance adjustments should only be made by professionals of the health care field or persons fully conversant with this process and the driver's capabilities. Incorrect settings could cause injury to the driver, bystanders, damage to the chair and surrounding property.

After the wheelchair has been set up, check to make sure that the wheelchair performs to the specifications entered in the programming procedures. If the wheelchair does not perform to specifications, turn the wheelchair off immediately and re-program. Repeat procedure until the wheelchair performs to the specifications.

Do not operate the DX system if it behaves erratically, or shows abnormal response, heating, smoke or arcing. Turn the system off, disconnect the battery or open the battery overload switch, and consult your service agent.

Do not operate your DX system if the battery is nearly flat as a dangerous situation may result due to a loss of power in an inopportune place.

Ensure the controller is turned off when not in use.

No connector pins should be touched, as contamination or damage due to electrostatic discharge may result. Dummy sockets in unused DXBUS connectors should be left in place unless a new module is added to the system.

Whilst designed to resist water penetration, under extreme conditions moisture might enter the ClickToGo. Any spillage over the ClickToGo should be wiped dry without delay. The ClickToGo may be used outdoors in light drizzle conditions but should be protected from rain.

Most electronic equipment is influenced by Radio Frequency Interference (RFI). Caution should be exercised with regard to the use of portable communications equipment in the area around such equipment. While the manufacturer has

made every effort to ensure that RFI does not cause problems, very strong signals could still cause a problem. If RFI causes erratic behavior, shut the wheelchair off immediately. Leave off while transmission is in progress.

In the event of a fault indicator flashing while driving (battery gauge and/or status LED), the user must ensure that the system is behaving normally. If not, the system must be turned off and a Service Agent called immediately.

Report any malfunctions immediately to your Service Agent.

Know the risks and limitations

Like any mechanical propelled vehicle there are certain risks involved.

The driver is responsible for any damage or injury that may occur to a party as a result of using a powered wheelchair. If the driver cannot assume responsibility due to age or disability then a carer must be present and be able to take over control either using a stop switch or a dual control in case of an emergency. You may wish to consider taking out insurance to cover any claims arising from such an incident.

The most sensitive part of a ClickToGo system is the driver's switch and the cable that connects it to the ClickToGo. The owner or carer must assume responsibility for regularly checking the integrity and positioning of the switch and cable and report any problems to the service agent immediately.

If a switch should malfunction or the switch cable becomes damaged, 1 of 2 things may happen. 1) If it malfunctions in an open circuit state, for example a clean cut of the cable, the chair will not function at all. 2) If it malfunctions in a closed circuit state, for example if the cable is shredded and the wires touch each other OR the switch becomes trapped in a closed position, the chair will enter drive mode and continue to drive until the carer or attendant takes control. A feature of the ClickToGo is an automatic stop time that can be set so that the chair will stop in this instance after a defined period of time. It is recommended to use this feature at all times.

Driving in a straight line is difficult using any switch driving control. The problem is that the user cannot make small left/right adjustments like a joystick user. It is possible to minimise the veer by using solid tires, a rear wheel-drive chair and fitting a ClickToGo Heading Lock device. However, it is not possible to totally eliminate veer as it depends on the surface conditions, the speed of the chair, the loading on the chair etc. As a rule of thumb if a chair veers to the left when driving on a good surface one way, but veers to the right when driving the other way, then the veer is minimised as much as it can be for that chair. On a good surface without a Heading Lock you should expect to notice the chair veering to one side or the other after a distance of 3-4 metres.

9 EC Declaration Of Conformity

Rationale

The Unique Perspectives Ltd. ClickToGo device is designed for the intended purpose of providing an alternative method of controlling the function of a powered wheelchair. A wheelchair is considered a medical device as defined within Council Directive 93/42/EEC concerning medical devices.

The ClickToGo is designed for use in combination with a Controls Dynamic DX control system, incorporates a DX UCM and uses a standard DXBUS connector.

The ClickToGo replaces the standard Controls Dynamic's Joystick.

As the intended purpose is to control a powered wheelchair, and as the ClickToGo meets the definition of an "Accessory" of a medical device, as defined at Article 1 paragraph 2 b) of the Directive, the ClickToGo has been CE marked as a medical device in accord with the Directive requirements.

Classification

The Unique Perspectives Ltd. ClickToGo control system is intended to provide an alternative operating / control system for those who would find it difficult, painful, or impossible, due to an injury or handicap, to operate a standard powered wheelchair control. It is intended to be used in combination with Class I medical devices only.

The ClickToGo is classified as a Class I device.

Compliance Certificate

The compliance certificate issued by Unique Perspectives Ltd. Does not relieve a wheelchair manufacturer from compliance testing their particular wheelchairs.

A manufacturers wheelchair must meet the requirements of the directive before fitting of the Unique Perspectives Ltd. ClickToGo.

As the ClickToGo is an 'Accessory' to a medical device re-testing of a manufacturer's wheelchair with the ClickToGo fitted is not a requirement.

Council Directive 93/42/EEC of 14 June 1993
concerning medical devices.

Unique Perspectives Limited, Ballyclovan Cottage, Ballyline, Callan, Co. Kilkenny, Ireland, declare that:

? the Unique Perspectives Limited Click-2-Go device, as described within the technical file TF.1, conforms to Class I requirements of Council Directive 93/42/EEC of 14 June 1993 concerning medical devices;

? is in conformity with the provisions of that Directive and, where such is the case, with the national standards transposing harmonized standards as noted within the technical file TF 1;

? the requirements of Annex I, Annex VII, Annex IX have been followed for Class I devices and registration requirements of Article 14 have been notified to the Rep. Of Ireland Competent Authority;

? the Unique Perspectives Limited Click-2-Go device is an Accessory of a medical device;

? the Declaration covers all Unique Perspectives Limited Click-2-Go devices placed on the market on or after September 1999 and until such time as a renewed conformity declaration is raised.

This declaration is signed on behalf of Unique Perspectives Limited by:

Signed _____

Name _____

Company Position _____

Date September 1999

10 Warranty

All equipment supplied by Unique Perspectives Ltd is warranted by the company to be free from faulty materials or workmanship. If any defect is found within the warranty period of 6 months, the company will repair the equipment, or at its discretion, replace the equipment without charge for materials and labor.

The warranty is subject to the conditions that the equipment:

? Has been correctly installed

? Has been used solely in accordance with this manual.

? Has been properly connected to a DX Power Module in accordance with this manual.

? Has not been subjected to misuse or accident, or been modified or repaired by any person other than someone authorised by Unique Perspectives Ltd.

? Has been used solely for the driving of electrically powered wheelchairs in accordance with the wheelchair manufacturer's recommendations.

11 Sales and Service Information

For Sales and Service advice, or in case of any difficulty, please contact:

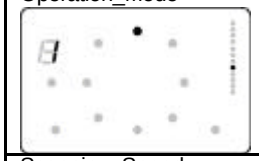
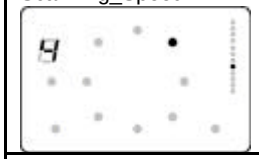
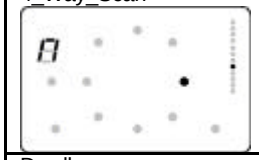
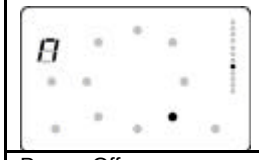
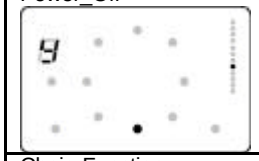
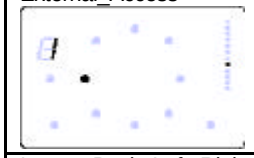
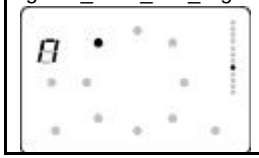
Unique Perspectives Ltd.
Ballyclovan
Callan
Kilkenny
Ireland

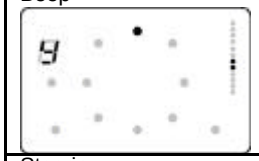
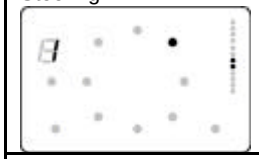
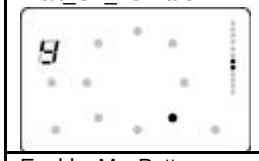
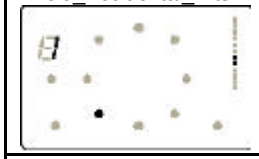
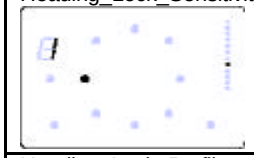
Telephone: +353 56 7725913
Fax: +353 56 7725936

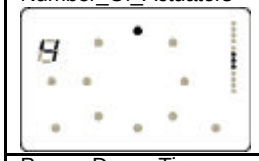
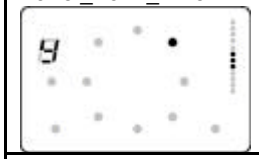
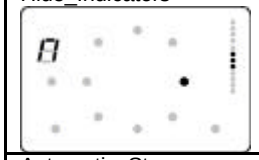
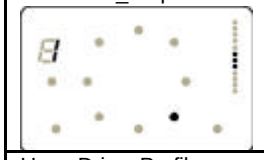
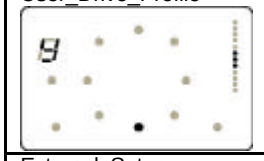
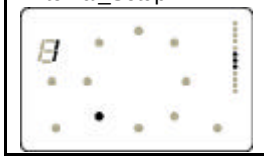
www.click2go.ie
info@click2go.ie

Note: The controller should be clearly labeled with the manufacturer's service agent's telephone number.

ClickToGo Parameter Quick Reference – Rev H – October 2007

Page 1 Parameters	Value and meaning
Operation_Mode 	1 = Automatic Scan 2 = Short Click Scan 3 = Step Scan 4 = 5 Switch Mode 5 = 3 Switch Mode Default: Automatic Scan
Scanning_Speed 	1 = 250ms, 2 = 300ms, 3 = 350ms, 4 = 450ms, 5 = 600ms, (Default) 6 = 800ms, 7 = 1.2sec, 8 = 2 sec
4_Way_Scan 	N = not required Y = yes, 4 way scan required. Default: not required
Dwell 	N = not required Y = yes, Dwell function is required Default: not required
Power_Off 	N = not required Y = yes, Include Power Off LED in scan so that user can turn off the ClickToGo (in 3 Switch mode works in opposite sense) Default: Yes
Chair_Function 	1 = Not required 2 = Seat function 3 = Light function 4 = Seat + Lights Default: 1
External_Access 	1 = Not required (Default) 2 = Yes, 1 sec exit time 3 = Yes, 2 sec exit time 4 = Yes, 3 sec exit time 5 = Yes, 4 sec exit time 6 = Yes, 5 sec exit time 7 = Yes, 6 sec exit time 8 = Yes, 7 sec exit time
Ignore_Back_Left_Right 	N = no Y = yes, ignore back left and back right LEDs Default: not required

Page 2 Parameters	Value and meaning
Beep 	N = not required Y = yes, audible beep is required Default: Yes, required.
Steering 	1 = no steering required 2 = secondary switch steering required 3 = primary & secondary switch steering required Default: no steering
Reset_To_Forward 	N = not required Y = yes, reset Arrow LED to forward after driving. Default: not required.
Wait_On_Forward 	N = not required Y = yes, pause on the forward direction arrow. Default: Yes
Enable_My_Pattern 	N = No, do not use my scanning pattern. Y = yes, do use my scanning pattern Default: No
Avoid_Accidental_Hits 	1 = No, accidental hits are not avoided 2 = Yes, avoid when scanning 3 = Yes, avoid at startup 4 = Yes, both Default: 2
Heading_Lock_Sensitivity 	Can be set between 1 and 4. When set to 1 the Heading Lock applies a weak correction signal. When set to 4 the Heading Lock applies maximum correction signal. Default: 4
Heading_Lock_Profiles 	Determines in which Drive Profiles the Heading Lock is enabled. For example when set to 3 the Heading Lock is enabled in Profiles 3,4 and 5. Default: 3

Page 3 Parameters	Value and meaning
Number_Of_Actuators 	Set equal to the number of actuators fitted to the wheelchair in order to avoid scanning unused seat function LEDs. (1-5) Default: 4
Power_Down_Timer 	N = not required Y = yes, power down after 3 minutes of idle time. Default: Yes, timer enabled.
Hide_Indicators 	N = no Y = yes, the battery gauge and drive profile indicators are turned off. Default: no
Automatic_Stop 	1 = automatic stop disabled 2 = 30 seconds (Default) 3 = 20 seconds 4 = 10 seconds 5 = 8 seconds 6 = 6 seconds 7 = 4 seconds 8 = 2 seconds
User_Drive_Profile 	N = no, the user cannot change the drive profile. Y = yes, the user can change the drive profile. Default: N
External_Setup 	1=Environmental Control 2=Communication Aid 3=Both devices, 1 first. 4=Both devices, 2 first 5=SingleShot device 6,7,8=Advanced (see text) 9=DynaVox (Default: 1)

To change a parameter

1. Make sure the ClickToGo is on
2. Select the page the parameter is on by clicking the program switch that number of times (i.e. for page two press it twice.) The number of flashing yellow battery LEDs should equal the page number.
3. Select the parameter by clicking the primary switch until the corresponding arrow is lit.
4. Change the parameter by holding down the primary switch until the value changes.
5. Step through the remaining pages by clicking the program button until the yellow LEDs go out and the  LED flashes rapidy.

Before you do any programming, look at these tables and know beforehand what changes you want to make. Be absolutely sure about changing a user's parameter settings. It is a good idea to photocopy this sheet and make note of a user's parameter settings before you make any changes.

To select a standard program or reset the ClickToGo (program 1)

1. Press and hold the program switch until the '-' changes to a '1'.
2. Continue holding the switch until the desired standard program number is displayed.
3. **Then release the program switch. The  LED falshes rapidly as the parameters are set to the selected program.**

To create your own scanning pattern see text