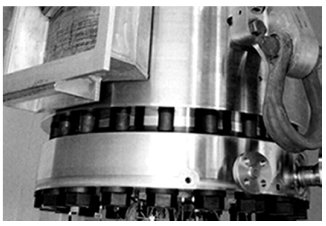
CURTISS-WRIGHT

Industrial Division

Industrial Division

VR2 Training



CURTISS-WRIGHT

Remote Controller nVR2

VR2 system

- Modular wheelchair control system
- VR2 or R-net type motor and battery connections
- Drive plus 1 or 2 actuators
- Easy installation on all types of wheelchairs
- Service-friendly

VR2 is a multi-module control system designed specifically to cater for the needs of entry-level to mid-range wheelchairs. The VR2 offers a high degree of flexibility, including options for the control of up to two seating actuators. In addition, versions of the Power Module with R-net connectors are available, so allowing simple upgrade paths for wheelchair models or users which may need to transition from a VR2 based system.

The Power Module is available with R-net type motor and battery connectors offering simple upgrade path on a wheelchair that requires more complex seating controls or specialty inputs available with R-net.

Joystick Modules

- Ergonomic and stylish design
- Drive only, seating and lighting options
- Simple and clear user controls
- Service friendly
- Thin and flexible cable

There are multiple VR2 Joystick Modules available - from the, drive-only version to options that can control seating and lighting functions - each being extremely ergonomic and stylish. The user controls are intuitive and easy to understand, making it simple for new wheelchair users to quickly become confident. All versions have been designed with servicing in mind; for example, the keypads and cable are field replaceable.

Dual Attendant Module

- Push button exchange of control between user and attendant
- Dual Attendant control of max. speed & actuators
- Works with all Power Modules as standard

The VR2 Dual Attendant Control system consists of a Joystick Module, Power Module and Dual Attendant Module. This allows the drive and seat actuator functions of the wheelchair to be controlled by either the occupant or by an attendant from another location on the wheelchair. Control can easily be exchanged via a push button and the attendant can limit the speed of the wheelchair. The attendant also has the option to adjust seat actuators when connected to a suitable VR2 power module.

VR2 Product Family

Power Modules

- Choice of power ratings up to 90A max
- Drive plus 1 or 2 actuators
- VR2 or R-net type motor and battery connections as standard
- Mounting dimensions as per R-net
- Versatile Inhibits

To offer the optimum combination of power and price the VR2 Power Module is available in 60A, 70A and 90A models. To add further flexibility to the system each Power Module can be populated to drive one or two seat actuators and is configured to recognize a Lighting and Dual Attendant Modules as standard. Each Power Module is available with R-net type battery and motor connectors and has the same mounting dimension as an R-net Power Module, this offers the flexibility to standardize motor and battery harnessing where R-net is a configuration option for the particular wheelchair. Advances in software design have led to a gradient performance never previous available in cost effective systems. If the wheelchair is driven up a hill there is practically zero roll-back between the time the joystick is released and the brakes are applied.

A high-power connector, primarily intended for an on-board charger, is fitted to the Power Module as standard. The 12Arms rating of this connector means it can be safely used for charging large capacity batteries. A universal inhibit pin is included, which can be set up with any type of charger inhibit output. A second inhibit connector is also provided and can also be used wherever there is a need to limit or prevent drive or seat movements.

Lighting Module

- Separate module to control lighting functions
- Works with all Power Module as standard
- StVZO lighting control
- Small foot print
- Modular system that is easy to install

The VR2 lighting system consists of a Joystick Module, Power Module and Lighting Module. This configuration offers a cost effective elegant way to control lights, turn indicators and hazard lights. The system provides constant brightness lamp control and turn indicator fault detection in compliance with the German StVZO standard, which is mandatory for wheelchairs in that market place.

The small size and modular nature of the lighting system allows for unobtrusive installations anywhere on the wheelchair. The simple push fit connection system makes wiring extremely quick and easy. With self protecting outputs there is no need to fit external fuses or breakers, so wiring harnesses are kept simple.

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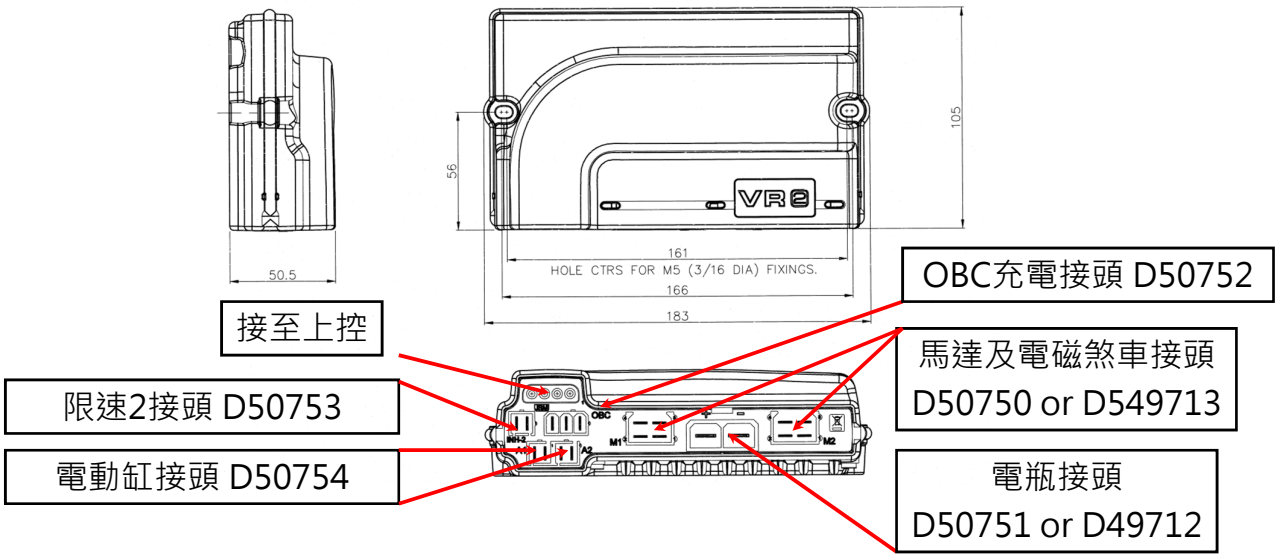
規格

- 需求電壓： 24Vdc
- 操作電壓： 16Vdc ~ 35Vdc
- 尖峰電壓： 35Vdc
- 逆向電壓： 40Vdc
- 輸出電流： 50A / 60A / 70A / 90A
- PWN頻率 ： 20kHz
- 煞車電壓： 12Vdc or 24Vdc (可程式)
- 煞車電流： 100mA min. ~ 1A max.(每一煞車)
- 充電電流： 12A rms max.
- 電動缸電流： 12A max.
- 防水防塵等級： IPX4
- 操作溫度： -25℃ ~ +50℃
- 保存溫度： -40℃ ~ +65℃

下控



Part Number	Description	Part Number	Description	Part Number	Description
D50950	VR2 PM50	D50676	VR2 PM70	D51080	VR2 PM90
D50681	VR2 PM 60	D50678	VR2 PM70-A1	D51086	VR2 PM90-A2
D50682	VR2 PM60-A1	D50679	VR2 PM70-A2		
D50785	VR2 PM60-A2				

上控

Part Number	Description
D50677	VR2 JSM
D50680	VR2 JSM-A
D50870	VR2 JSM-L
D50871	VR2 JSM-L-A
D51585	VR2 JSM

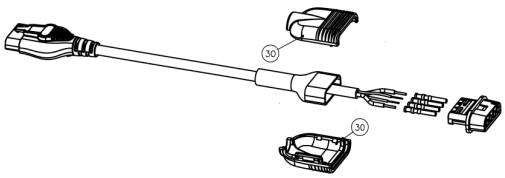
Part Number	Description
D50806	DIY EXTENSION CABLE KIT VR2
D50807	STRAIN RELIEF EXT CAB KIT VR2
SA77974	VR2 EXTENSION CABLE 0.5M
SA78444	LIGHTING MODULE EXTENSION CABLE

其他模組

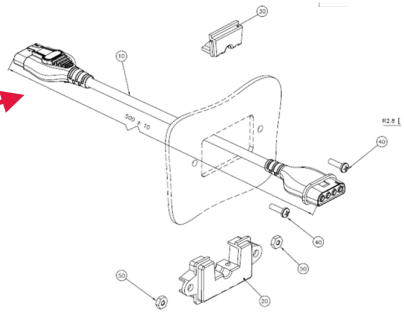
Part Number	Description
D50872	VR2 DUAL MODULE
SA78373	ATTENDANT MODULE CABLE
D50242	PG LIGHTING MODULE
D50301	LIGHTING CONNECT KIT

VR2 安裝示意圖

- 上控模組直接與動力模組連接
- 上控模組透過延長線與動力模組連接，延長線的一端可固定在體座外殼上，方便拆卸。



D50806

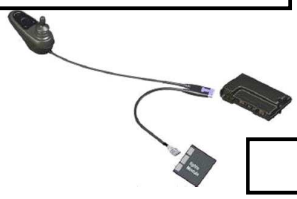


D50807

VR2 安裝示意圖

VR2 行駛功能加燈控功能示意圖

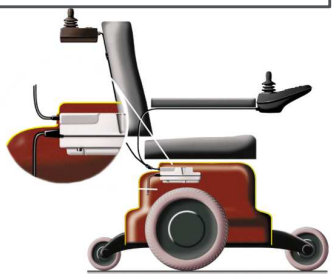
JSM-L或JSM-L-A



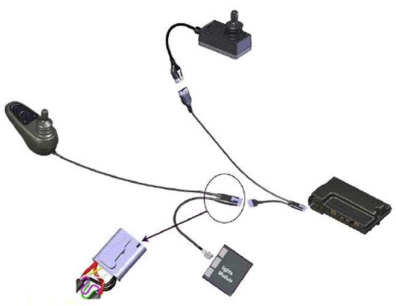
A. PM50 (不提供電動缸功能)
B. PM60, PM60-A1, PM60-A2.
PM70, PM70-A1, PM70-A2,
PM90, PM90-A2

燈控模組

VR2 加戒護控示意圖



VR2 加燈控及戒護控示意圖



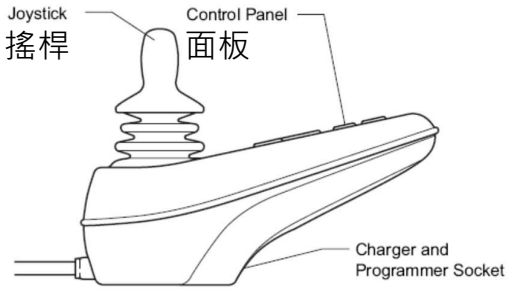
搭配線徑及連接器

The table below gives the minimum recommended wire sizes defined in ISO7176: 2008.

Controller Current Limit (A)	Battery wire size (mm^2)		Motor Wiring size (mm^2)	
	For Length <1000mm	For length 1000mm - 1500mm	For Length <1000mm	For length 1000mm - 1500mm
40	3.0	4.0	2.5	3.0
50	4.0	4.0	3.0	4.0
60	6.0	6.0	3.0	4.0
80	6.0	8.0	4.0	5.0
100	6.0	No guidance	6.0	6.0

Connector Kits	PGDT Reference	Inconnect Reference
Motor	D50750	IPG-7401-PS
Battery	D50751	IPG-7401-PS
Motor (90)	D49713 PG80-M	IPG-5401
Battery (90)	D49712 PG80-B	IPG-5402
On Board Charger	D50752	IPG-7301-PS
Inhibit 2	D50753	IPG-8201-PS
Actuator	D50754	IPG-8202-PS

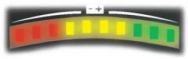
操作



充電及編程插座

僅行駛功能

On/Off Button
開關按鈕



Battery Gauge
電量表

Maximum Speed/ Profile Indicator
速度/操作模式指示燈

Horn Button
蜂鳴器

Speed / Profile Decrease Button
速度/操作模式遞減按鈕

Speed / Profile Increase Button
速度/操作模式遞增按鈕

操作

含電動缸

含燈控功能

含燈控及電動缸

On/Off Button
開關按鈕
Battery Gauge
電量表
Maximum Speed/ Profile Indicator
最高速度/操作模式指示燈
Horn Button
蜂鳴器
Speed / Profile Decrease Button
速度/操作模式遞減按鈕
Speed / Profile Increase Button
速度/操作模式遞增按鈕
Actuator Button + LED's
電動缸操作按鈕
Light Button + LED
大燈按鈕
Left Indicator Button + LED
左方向燈按鈕
Right Indicator Button + LED
右方向燈按鈕
Hazard Button + LED
故障燈按鈕

操作 – 安全檢查

每日檢查 (Daily Check)

搖桿 (Joystick)

檢查前，請確認控制器已關機。
檢查搖桿是否變形或受損。
嘗試操作搖桿，當釋放搖桿後，確認搖桿是否可回復到中心點。
過程中，如發現問題時，請聯絡你的供應商。

With the control system switched off, check that the joystick is not bent or damaged and that it returns to the center when you push and release it. If there is a problem do not continue with the safety checks and contact Your service agent.

操作 – 安全檢查

每週檢查 (Weekly Check)

電磁煞車 (Solenoid brake)
本測試需在水平地面進行，請確認輪椅至少須與附近障礙物保持1M以上的距離。
This test should be carried out on a level with at least one meter clear space around the wheelchair.

a. 打開控制器。 (Switch on the control system)
b. 間隔1秒後，檢查電量表是否恆亮或緩慢閃爍。
(Check That the battery gauge remains on, or flashes slowly, after one second)
c. 慢慢將搖桿向前推動，直到你聽到電磁煞車釋放的聲音。此時輪椅應可開始移動。
(Push the joystick slowly forwards until you hear the solenoid brakes operate. The chair may start to move)
d. 立刻放開搖桿，你應該可以在短時間內聽到兩邊電磁煞車操作的聲音。
(Immediately release the joystick. You must be able to hear each solenoid brake operate within a few seconds)
e. 依相同方法，分別測試搖桿向後、向左及向右推動的狀況。
(Repeat the test a further three times, pushing the joystick slowly backwards, left and right)

操作 – 安全檢查

每週檢查 (Weekly Check)
接頭 (Connectors)
確認所有接頭都妥當接合。
Make sure that all connectors are securely mated.

電纜 (Cables)
確認所有電纜極接頭是否損壞。
Check the condition of all cables and connectors for damage.

搖桿護套 (Joystick gaiter)
確認搖桿軸底部之橡膠護套是否脫離或破裂。本檢查只需目測檢驗，
不需直接接觸護套。
Check the thin rubber gaiter or boot, around the base of the joystick shaft, for damage or splitting. Check visually, do not handle the gaiter.

固定 (Mounting)
確認控制系統之所有元件都已妥善固定。任何固定用螺絲都不應過度鎖定。
Make sure that all the components of the control system are securely mounted. Do not overtighten any securing screws.

操作 – 速度檔位指示燈

速度檔位指示燈穩定顯示不閃爍
(Maximum Speed / Profile Indicator is Steady)
依設定不同分別表示最高速度或操作模式。
The display will vary slightly depending on whether the control system is programmed to operate with drive profiles.

速度檔位指示燈快速閃爍
(Maximum Speed / Profile Indicator Flashes)
輪椅的行進速度因安全因素遭到鎖定。
如在有座椅升降功能的輪椅中，最通常的狀況為座椅升高到一定高度。
This indicates the speed of the wheelchair is being limited for safety reasons.
The exact reason will depend on the type of wheelchair, however, the most Common cause is that the seat is in the elevated position.

操作 – 速度檔位指示燈

速度檔位指示燈上下來回跳動
(Maximum Speed / Profile Indicator Ripples Up and Down)
表示輪椅控制系統已被鎖定。
This indicates the control system is locked.

鎖定輪椅控制系統的步驟 (Locking the Wheelchair)
1. 在控制系統開機的狀況下，按住開關按鈕。
   While the control system is switched on, depress and hold the on/off button.
2. 經過1秒後，控制系統會發出一聲响聲。
   After 1 second the control system will bleep. Now release the on/off button.
3. 將搖桿向前推，直到控制系統再次發出响聲。
   Deflect the joystick forwards until the control system bleeps.
4. 將搖桿向後拉，直到控制系統再次發出响聲。
   Deflect the joystick in reverse until the control system bleeps.
5. 放開搖桿，控制系統發出一長响聲。
   Release the joystick, there will be a long bleep.
6. 現在輪椅控制系統已被鎖定。
   The wheelchair is now locked.

操作 – 速度檔位指示燈

速度檔位指示燈上下來回跳動
(Maximum Speed / Profile Indicator Ripples Up and Down)
表示輪椅控制系統已被鎖定。
This indicates the control system is locked.

輪椅控制系統解鎖步驟 (Unlocking the Wheelchair)

1. 按一次開關按鈕，使控制系統開機。此時，速度檔位指示燈上下來回跳動 。
   Use the on/off button to switch the control system on. The maximum speed / profile indicator will be rippling up and down.
2. 將搖桿向前推，直到控制系統發出响聲。
   Deflect the joystick forwards until the control system bleeps.
3. 將搖桿向後拉，直到控制系統再次發出响聲。
   Deflect the joystick in reverse until the control system bleeps.
5. 放開搖桿，控制系統發出一長响聲。
   Release the joystick, there will be a long bleep.
6. 現在輪椅控制系統已經解鎖。
   The wheelchair is now unlocked.

操作 – 電量表

電量表穩定顯示不閃爍 (Battery Gauge is Steady)
表示一切正常。
This indicates that all is well.

電量表緩慢閃爍 (Battery Gauge Flashes Slowly)
表示控制器功能正常，但你必須盡快充電。
The control system is functioning correctly, but you should charge the battery as soon as possible.

電量表上下來回跳動 (Battery Gauge Steps Up)
表示輪椅正在充電中，此時操作輪椅應無任何反應。在拔除充電器，並重新開啟控制器電源後，輪椅方可正常操作。
The wheelchair batteries are being charged. You will not be able to drive the wheelchair until the charger is disconnected and you have switched the control system off and on again.

操作 – 電量表

電量表每2.5秒閃爍一次
(Battery Gauge Blinks Once Every 2.5 Seconds)
輪椅持續一段時間未被驅動，控制器進入“睡眠狀態 ”。
所謂 “一段時間 “依實際設定之參數而定。
重新開啟控制器電源後，即可正常操作。

The control system has “gone to sleep” because the wheelchair has not been driven for a period of time. The time period depends on the programming of the system. To re-start, switch the system off and on again.

操作 – 電量表

在未移動搖桿時，電量表快速閃爍
(Battery Gauge Flashes Rapidly even with the joystick released)
控制器偵測到輪椅的電器系統發生故障，請依下列步驟處理。
This indicates a system trip, i.e. the controller has detected a problem somewhere in the wheelchair’ s electrical system.
Please follow the following procedure.

1. 關閉控制系統電源。
   Switch off the control system.
2. 確認輪椅上所有接頭都與控制系統妥善連接。
   Make sure that all connectors on the wheelchair and the control system are mated securely.
3. 檢查電瓶狀況。
   Check the condition of the battery.
4. 如果無法發現問題點，請參考自我診斷表，查詢可能發生故障的原因。
   If you can’ t find the problem, try using the self-help guide.
5. 重新打開電源，嘗試開動輪椅。如果持續發生故障，請關閉控制系統電源，千萬不要再開動輪椅。請立即與你的服務單位連絡。
   Switch on the control system again and try to drive the wheelchair. If the safety circuit operate again, switch off and do not try to use the wheelchair. Contact your service agent.

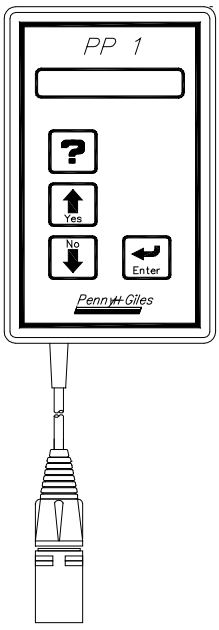
自我診斷表

1 Bar	低電壓 Battery Need Charging
2 Bar	左馬達斷線 L.Motor Bad Connection
3 Bar	左馬達短路 L.Motor Short Circuit
4 Bar	右馬達斷線 R.Motor Bad Connection
5 Bar	右馬達短路 R.Motor Short Circuit
6 Bar	充電限速中 Speed Inhibit, Could be Charging Inhibit
7 Bar	操縱桿可能故障 Joystick Fault
8 Bar	控制器可能故障 Controller Fault
9 Bar	電磁煞車故障 S.Brake Bad Connection
10 Bar	電池電壓過高 Excessive Voltage, Battery Poor Connection

7 Bar + S	操縱桿通訊不良 Communication Fault
8 Bar + A	電動缸故障 An Actuator Trip

Blink	休眠狀態 Sleep Mode
Charge Step	充電中 Charging
Ripple	操縱桿未置中 Joystick Not Centralized

參數設定



掌上型編碼器：PP1

電腦編碼程式：PC Programmer

Part Number	Description
D49510	PP1a
D49511	PP1b
D50144	MOBILITY PCP A DEALER (WHEELCHAIR)
D50145	MOB.PCP B - OEM (W'CHAIR & SCOOTER)
D50427	MOBILITY PCP C - MANUFACTURING

Speed

Acceleration (Acceleration ?) 加速度

當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的前進及倒車加速度，數值越大加速越快。
參數之數值代表控制器可提供最大加速度之百分比(0%~100%)。

Adjusts the value for forward and reverse acceleration of the Wheelchair.
Adjustable in steps of 1 from 0 to 100.
A higher value gives faster acceleration.
This programmed value of acceleration occurs when speed setting 5 is selected.

Speed

Deceleration (Deceleration ?) 減速度

當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的前進減速度，數值越大減速越快。
參數之數值代表控制器可提供最大減速度之百分比(0%~100%)。

Adjusts the value for forward and reverse deceleration (or braking) of the wheelchair.
Adjustable in steps of 1 from 0 to 100.
A higher value gives faster deceleration.
This programmed value of deceleration occurs when speed setting 5 is selected.

參數介紹

Turn Acceleration (Turn Accel ‘n ?) 轉彎加速度

當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的轉彎加速度，數值越大轉彎加速越快。

參數之數值代表控制器可提供最大轉彎加速度之百分比(0%~100%)。

Adjusts the value for turning acceleration of the wheelchair, from 0 to 100 in steps of 1.

A higher value gives faster acceleration. This programmed value of acceleration occurs when speed setting 5 is selected.

Turn Deceleration (Turn Decel ‘n ?) 轉彎減速度

當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的轉彎減速度，數值越大轉彎減速越快。

參數之數值代表控制器可提供最大轉彎減速度之百分比(0%~100%)。

Adjusts the value for turning deceleration (or braking) of the wheelchair. Adjustable in steps of 1 from 0 to 100.

A higher value gives faster deceleration. This programmed value of deceleration occurs when the Joystick Module has speed setting 5 selected.

Speed

Forward Speed (%) -> Max (Forward Speed ? -> max fwd spd) 最大前進速度

當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的前進急速，數值越大前進速度越快。

參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Forward Speed (%) -> Min (Forward Speed ? -> min fwd spd) 最小前進速度

當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的前進急速，數值越大前進速度越快。

參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Adjusts the minimum and maximum values for forward speed of the wheelchair.

Adjustable in steps of 1% from 0 to 100%.

A higher value gives a faster speed. The minimum value occurs when speed setting 1 is selected, and the maximum value occurs at speed setting 5.

Speed

Reverse Speed (%) -> Max (Reverse Speed ? -> max rev spd) 最大後退速度
當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的倒車急速，數值越大後退速度越快。
參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Reverse Speed (%) -> Min (Reverse Speed ? -> min rev spd) 最小後退速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的倒車急速，數值越大後退速度越快。
參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Adjusts the minimum and maximum values for reverse speed of the wheelchair.
Adjustable in steps of 1% from 0 to 100%.
A higher value gives a faster speed. The minimum value occurs when the speed setting 1 is selected, and the maximum value occurs at speed setting 5.

Speed

Turning Speed (%) -> Max (Turning Speed ? -> max turn spd) 最大轉彎速度
當速度設在5檔(速度檔位指示燈亮5個燈)時所採用的轉彎速度，數值越大迴轉速度越快。
參數之數值代表控制器可提供轉彎全速之百分比(0%~100%)。

Turning Speed (%) -> Min (Turning Speed ? -> min turn spd) 最小轉彎速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的轉彎速度，數值越大迴轉速度越快。
參數之數值代表控制器可提供轉彎全速之百分比(0%~100%)。

Adjusts the minimum and maximum values for the turning speed of the wheelchair. Adjustable in steps of 1% from 0 to 100%.
A higher value gives a faster speed.
If Drive Profile 0 is selected then the minimum value occurs when speed setting 1 is selected, and the maximum value occurs when speed setting 5 is selected.

Speed

Power (%) (Power ?) 最高輸出動力
調整控制器之最大輸出動力，數值越大輸出之動力越大
參數之數值代表控制器可提供最大動力之百分比(0%~100%)。

Sets the power of the wheelchair.
Adjustable in steps of 1% from 0 to 100%.
Power is the ability of a wheelchair to climb a hill or overcome an obstacle.
If it is set to 100% then the wheelchair will provide full power.
Values below 100% will result in reduced power.
A typical use is to minimize damage to doorways or furniture if the wheelchair isbeing used indoors.
The values can be set independently between drive profiles, meaning separate indoor and outdoor profiles can be defined.

Speed

Number of Drive Profiles (Profiles ?) 行駛情境
設定輪椅不同行駛情境組數。

The controller can operate with single or multiple drive profiles.
A drive profile is a collection of programmable parameters comprising of Acceleration, Deceleration, Turn Acceleration, Turn Deceleration, Forward Speed, Reverse Speed and Turning Speed.
The number of drive profiles is determined by the programmable parameter, Number of Drive Profiles.
If Number of Drive Profiles is set to 0, then there is one setting for each of the parameters listed previously, and the control system' s maximum speed setting can be changed with the maximum speed / profile increase and decrease buttons.
If the values of Number of Drive Profiles is 2 to 5, there is a corresponding number of drive profiles and each listed parameter can be individually set within a profile. The maximum speed /profile increase and decrease buttons are then used to switch between the available profiles.

Speed

Minimum Acceleration (%) (Engineer Menu ? -> Min Accel ‘n % ?)
最小加速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的前進加速度，數值越大加速越快。
參數之數值代表加速度(Acceleration (Acceleration ?))之百分比(0%~100%)。

Minimum Deceleration (%) (Engineer Menu ? -> Min Decel'n % ?)
最小減速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的前進減速度，數值越大減速越快。
參數之數值代表減速度(Deceleration (Deceleration ?))之百分比(0%~100%)。

Speed

Minimum Turn Acceleration (%)
(Engineer Menu ? -> Min Turn Acc % ?) 最小轉彎加速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的轉彎加速度，數值越大加速越快。
參數之數值代表最大轉彎加速度之百分比(0%~100%)。

Minimum Turn Deceleration (%)
(Engineer Menu ? -> Min Turn Dec % ?) 最小轉彎減速度
當速度設在1檔(速度檔位指示燈亮1個燈)時所採用的轉彎減速度，數值越大減速越快。
參數之數值代表最大轉彎減速度之百分比(0%~100%)。

Actuator

Number of Actuators (Engineer Menu -> Actuators) 電動缸數量
設定使用電動缸的數量

Sets the number of actuators to be connected to the VR2 control system.
This value must be set correctly in order to get the most informative and
user-friendly method of actuator control.
It is adjustable between 0 - 2 actuators in steps of 1.

Actuator

Actuator 1 End Force, Actuator 2 End Force
(Actuator 1 ?-> force) , (Actuator 2? -> force) 電動缸停止力量(電流)
此值設定當電動缸行進到終點時，迫使電動缸停止之力道
數值越大表示所須停止力量越大。
Because of the wide variation in actuator motors and applications, the end-stop current threshold is programmable.

Actuator 1 Current Limit Timeout, Actuator 2 Current Limit Timeout
電動缸輸出達到停止力量後的延遲時間
此值設定當電動缸行進中超過停止力量，到控制器停止對電動缸輸出電流的時間
數值越大表示延遲時間越久，每次增減為一單位，每單位代表0.01秒。

60A	1	2	3	4	5
Amps	4	6	8	10	12
70 / 90A	1	2	3	4	5
Amps	8	8	8	10	12

Actuator

Actuator Selection with Joystick (Act Selection? -> with J’ stick)
由搖桿選用電動缸
當此值設定為”ON”時，表示可由搖桿選擇所要操作的電動缸
This parameter determines whether selection between different actuator
channels can be made with left/right movements of the joystick.
You can set between on and off.
On: Means that selection between actuator channels can be made with the joystick and the actuator buttons.
Off: Means that only the actuator buttons can be used to select between actuator channels.
The parameter is only applicable if the Number of Actuators parameter is set to greater than 1.

Actuator

Actuator End Stop Detection 使用電動缸端點停止力量功能
當此值設定為”ON”時，表示開啟偵測功能

End Stop Bleep 電動缸停止聲響
當此值設定為”ON”時，表示當電動缸停止時會發出聲響。
This allows the use of an Audible bleep to tell you when the Actuator is stalled at its end stop.
This parameter can be set to On or Off.

Invert Axis 1, Invert Axis 2 改變搖桿操作電動缸之運動方向

Operation

Sleep Time (minutes) (Sleep Timer ?) 休眠計時

參數之意義為在設定時間內若無任何有效的操作訊號傳入控制器，則控制器自動進行安全關機。 此自動關機之時間可設為0至30分鐘。
設0分鐘意即永不自動關機。
自動關機後若要啟動, 須重新開啟電源

Sets the period of time before the control system will turn itself off if the wheelchair is not driven.
The time can be set between 0 and 30 minutes in steps of 1 minute.
If the time is set to 0 the system will never turn itself off.

Operation

Joystick Throw -> Forward (%) (Joystick Throw ? -> forward thrw)
Joystick Throw -> Reverse (%) (Joystick Throw ? -> reverse thrw)
Joystick Throw -> Left (%) (Joystick Throw ? -> left throw)
Joystick Throw -> Right (%) (Joystick Throw ? -> right throw)
搖桿行程

設定輪椅欲達到急速時，搖桿所需移動的行程。
This allows you to program the control system so that full speed can be reached with a reduced joystick movement (throw).
This is particularly useful for wheelchair users with limited hand or arm movement.

Operation

Invert Joystick (Invert Joystick ? *Dealer Only) 反轉搖桿操作方向

當此值設定為”ON”時，表示往前推動搖桿時輪椅會向後行駛

This parameter inverts the direction of travel when moving the joystick.
This parameter can be set to On or Off.
On Deflecting the joystick Forward will result in Reverse drive.
Off Deflecting the joystick Forward will result in Forward drive.

Left and Right deflection of the joystick remain unchanged.

Operation

Steer Correct (Steer Correct ?) 方向修正

當搖桿往正前方12點鐘方向推動，輪椅卻無法往正前方行駛而偏向特定方向時，可藉由此參數修正行駛的偏離角度。
參數加大表示行駛方向向右修正。

This parameter compensates for any mismatching of motors to ensure that the wheelchair drives directly forward when the control system’s joystick is being pushed directly forward.
It is normally set to zero but may be varied from -9 to +9 in steps of 1.
If the chair is veering to the left, you should increase the setting.
If the chair veers to the right, decrease the setting.
If Swap Motors is set, this logic will be reversed.

Operation

Switch Bleep Volume (Bleep Volume ?) 改變喇叭音量

數值越大，喇叭音量越大

Switch Bleep Volume sets the volume of the audible feedback given whenever a button on the controller is operated.
Adjustable between 0 and 10 in steps of 1.
If the parameter is set to 0 then the Switch Bleep function is effectively switched OFF.
The higher the value, the louder the audible feedback.

Operation

Speed Adjustment while Driving (Speed Adjust ? -> in drive) 行駛間速度檔可切換

當此值設定為”ON”時，表示可在行駛間切換速度檔位

This parameter sets whether the controller's speed/profile buttons are active while the wheelchair is being driven.
The parameter can be set to on or off.

On Means the buttons are active while the wheelchair is being driven, so the user can make maximum speed setting adjustments (or select a different drive profile) while actually moving.

Off Means the buttons are not active while the wheelchair is being driven, so the joystick must be released and the wheelchair at rest before maximum speed setting adjustments (or different drive profile selections) can be made.

Battery

Low Battery Flash Level (Engineer Menu ? -> Battery Flash ?)
電池電量不足之閃燈警報點
當電量低於所設定之參數值時，發出電量不足之警告。
例如：若參數設定為2，表示當電量只剩2格(電量顯示表之燈數) 時，電量顯示表開始閃爍

待機狀態時，燈號、電壓內定對應值

1 bar ≒ 23.30 V	2 bars ≒ 23.46 V
3 bars ≒ 23.74 V	4 bars ≒ 24.00 V
5 bars ≒ 24.28 V	6 bars ≒ 24.50 V
7 bars ≒ 24.72 V	8 bars ≒ 24.94 V
9 bars ≒ 25.14 V	10 bars ≒ 25.30 V

Battery

Cable Resistance (mili-Ohms)
(Engineer Menu ? -> Battery Cable ?) 電瓶線路之電阻值
此設定值為控制器至電池間之線路電阻值的總合(含正、負極線路及電池內阻) ，其設定範圍為1mΩ或250mΩ 。

Calibration Factor (Enginner Menu ? -> Gauge Cal ?) 校正係數
此為進一步調整電量顯示表顯示之正確性。通常由工廠設定。若您需要調整，請與PG連絡。

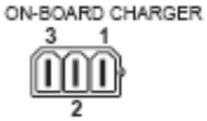
Low Battery Alarm (Engineer Menu ? -> Battery Alarm ?)
電瓶電量不足發出警報音
當設定為 ON 時, 在低電量時會發出警示音。

Low Voltage Cut-out (Deci-Volts) 行駛最低電壓
Low Voltage Time (Seconds) 行駛最低電壓之延遲時間
當電瓶電壓低於行駛最低電壓經過設定之延遲時間後，控制器會切斷電源強迫輪椅停止行駛

Inhibit

VR2 可提共3組速度限限(Inhibit)之功能.
1. Inhibit 1：充電時的限速
2. Inhibit 2：一般用途
3. Inhibit 3 (OBC, Pin2) ：充電或一般用途

INH-2	Function
1	0V
2	Inhibit 2



OBC	Function
1	Battery +ve
2	Inhibit 3
3	0V

Inhibit Alarm

Inhibit 1 Alarm (Engineer Menu ? -> Inhibit 1 Alarm) 充電中是否發出警報聲

Inhibit 2 Alarm
Inhibit 2動作時是否發出警報

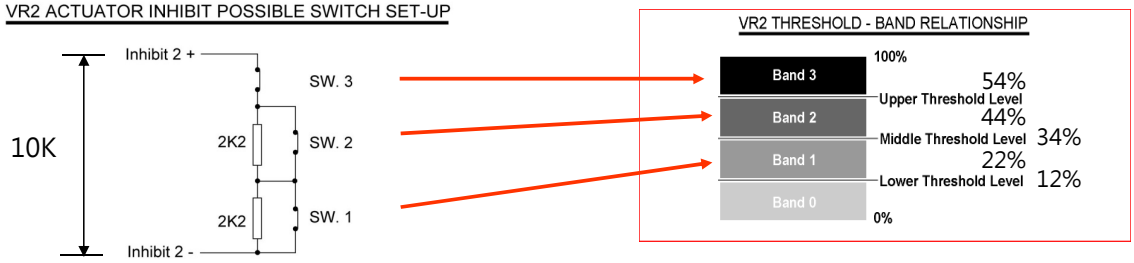
Inhibit 3 Alarm
Inhibit 3動作時是否發出警報

Inhibit

例：含座位升降(Channel 1)及椅背傾斜(Channel 2) 功能之輪椅，如何在座位高低改變時改變行駛速度並限制椅背不可傾倒

- Inhibit 2 Upper Level Threshold: 54%
- Inhibit 2 Middle Level Threshold: 34%
- Inhibit 2 Lower Level Threshold: 12%
- Inhibit 2 Speed Limit in Band 0: 100%
- Inhibit 2 Speed Limit in Band 1: 75%
- Inhibit 2 Speed Limit in Band 2: 50%
- Inhibit 2 Speed Limit in Band 3: 0%

座位高低改變時改變行駛速度



Inhibit

Channel 1 Up

Inhibit in Inhibit 2 Band O	Yes/No
Inhibit in Inhibit 2 Band 3	Yes/No
Inhibit in Inhibit 3 Band O	Yes/No
Inhibit in Inhibit 3 Band 3	Yes/No

Channel 1 Down

Inhibit in Inhibit 2 Band O	Yes/No
Inhibit in Inhibit 2 Band 3	Yes/No
Inhibit in Inhibit 3 Band O	Yes/No
Inhibit in Inhibit 3 Band 3	Yes/No

Channel 2 Up

Inhibit in Inhibit 2 Band O	*No*
Inhibit in Inhibit 2 Band 3	*Yes*
Inhibit in Inhibit 3 Band O	*No*
Inhibit in Inhibit 3 Band 3	*No*

Channel 2 Down

Inhibit in Inhibit 2 Band O	*No*
Inhibit in Inhibit 2 Band 3	*Yes*
Inhibit in Inhibit 3 Band O	*No*
Inhibit in Inhibit 3 Band 3	*No*

在座位高低改變時限制椅背不可傾倒

Inhibit

Inhibit x Operation 限速x操作模式
Latched – 限速條件消失後須重新開機方能行駛
Non-Latched -限速條件消失後即能行駛

Inhibit x Debounce 限速x動作前延遲時間
設定範圍：100ms ~ 4000ms

Inhibit x Alarm 限速x作動時是否發出警報音
"OFF"：無警報音。
"ON"： 有警報音。

Disable Inhibit x in Drive 行駛間忽略Inhibit的變化

Seat Reversal 座位反轉時之功能變化
"OFF"：無座位反轉之功能變化，限速2依前述基本定義作動。
"ON"：如果Inhibit 2連通到0V則馬達轉向顛倒，並自動依參數"Front Wheel Drive Rate "之設定值，切換到前輪驅動的運作模式。

General

Fast Brake Rate (Engineer Menu ? -> Fast Brake Rate?) 方向切換減速度
當搖桿由前進突然轉為後退或搖桿操作角度瞬間超過90º)，移動中的輪椅將依照本設定值迅速減速。
參數之數值代表控制器可提供最大減速度之百分比(0%~100%)。

Soft Stop Rate (Engineer Menu ? -> Soft Stop Rate ?) 緩停(斷電)減速度
移動中的輪椅若控制器突然被關閉或斷電，車速會依此參數設定之減速度至停止。
參數之數值代表控制器可提供最大減速度之百分比(0%~100%)。

General (PM90 only)

Front Wheel Drive Type，Front Wheel Drive Rate (Engineer Menu ? -> Front Drv Rate ?) ，FWD Acceleration Limit ，Advanced Electronic Stability (AES) AES Rate 前驅修正參數

可協助改善前輪或中輪驅動輪椅在高速之不穩定性及甩尾的問題

設定方法如下

1. 設定Front Wheel Drive Rate

將Front Wheel Drive Type設為1，令輪椅繞行半徑約5M的圓周。逐漸加大Front Wheel Drive Rate，直到輪椅可順利繞行圓周。

2. 設定AES

a. 將Advanced Electronic Stability (AES)設定為ON，AES Rate的內定值為55%。

b. 令輪椅繞行半徑約5M的圓周。在固定搖桿的位置後，如果發現輪椅繞行的半徑越來越小時，請減小AES Rate。

c. 將搖桿推到12點鐘方向，以脫離圓周繞行。如果發現輪椅左右搖擺，表示AES修正過度，請加大AES Rate，以增加輪椅的穩定性。

d. 另外一種設定AES Rate的方法，為利用鋪有跳動路面的車道。逐步修正AES Rate可避免前驅車在進入或脫離弧形路面時打轉。

General (PM90 only)

Front Wheel Drive Type，Front Wheel Drive Rate (Engineer Menu ? -> Front Drv Rate ?) ，FWD Acceleration Limit ，Advanced Electronic Stability (AES) AES Rate 前驅修正參數

3. 選擇Front Wheel Drive Type及設定Front Wheel Drive Rate

a. 高速運行中，如果發現方向操控不穩定時，可選擇使用Front Wheel Drive Type 2。

b. 選擇Front Wheel Drive Type 2時，必須重新調整Front Wheel Drive Rate。

令 輪椅繞行半徑約5M的圓周。逐漸加大Front Wheel Drive Rate，直到輪椅可順利繞行圓周。

4. 設定FWD Acceleration Limit

a. 將搖桿推到3點鐘或9點鐘方向，使輪椅在原地轉彎。

b. 慢慢將搖桿推至12點鐘方向，輪椅應該可以順利進入直行。

c. 如果無法順利進入直行，請以每次增加10%的方式加大FWD Acceleration Limit，直到輪椅可以順利直行。

General

Soft Reverse Deceleration Rate (%)
(Engineer Menu ? -> Soft Reverse ?) 倒車減速度
參數之數值代表最大減速度之百分比(0%~100%)。

Reverse Driving Alarm (Engineer Menu ? -> Reverse Alarm ?)
倒車警報聲
當設定為ON，輪椅在倒車時會發出提醒警報聲。
Sets whether the controller gives an audible warning while driving in reverse. The parameter can be set to on or off.
On Means there is an audible alarm given.
Off Means there is not.

Brake Disconnected Alarm (Engineer Menu ? -> Brake Alarm ?)
煞車警示音
當設定為 ON 時, 當車子在電磁煞車斷線時則會發出提醒警示音。

General

K10 Programming Restriction (Engineer Menu ? -> K10 ?)
經銷商版本之編程器或PC軟體不准修改控制器之參數
當設定為ON時參數無法由經銷商版本之編程器或PC軟體做修改。

Lock Function Enabled (Engineer Menu ? -> Lock Function ?)
使用電子鎖功能設定
當設定為 ON 時，可使用電子鎖功能。

Brake Fault Detect (Engineer Menu ? -> Brake Fault ?)
啟動時檢測電磁煞車系統
當設定為 ON 時, 控制器會在啟動後檢測輪椅的煞車系統是否有問題。
當設定為 OFF 時, 控制器則不會在啟動後檢測輪椅的煞車系統。

Brake Voltage 設定電磁煞車電壓
設定範圍：12V / 24V

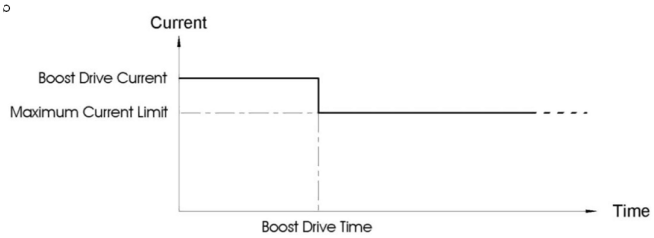
Output Voltage (Deci-volts) 設定輸出電壓
設定速度100%時，控制器之輸出電壓。
設定範圍：21.5V ~ 25.0V

Motor

Boost Drive Current (Amps)
(Engineer Menu -> Boost Current) 瞬間電流
參數修改時，每次增減一單位為1A。
設定範圍: Current Limit Max ~ 控制器硬體最大瞬間電流

Current Limit Max (Amps)
(Engineer Menu ? -> Current Limit ? -> max current) 最大輸出電流
參數修改時，每次增減一單位為1A
設定範圍: Current Limit Min ~ 控制器硬體最大電流

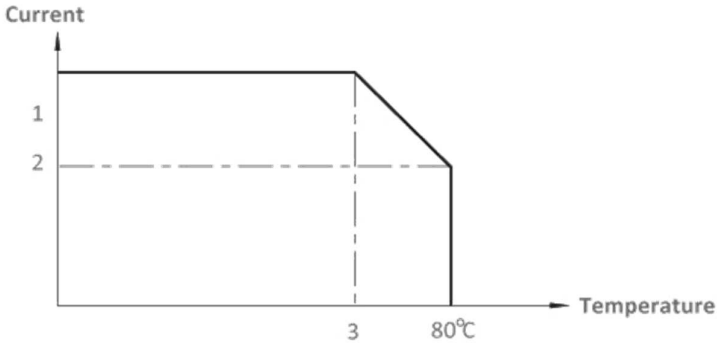
Boost Current Time (Seconds)
(Engineer Menu -> Boost Time) 瞬間電流持續時間
參數修改時，每次增減一單位為1秒。
設定範圍: 0 ~ 10秒



Motor

Current Foldback Temperature (Deg C)
(Engineer Menu ? -> Temp. Foldback ?) 限電流溫度起點
設定範圍: 0 ~ 80C

Current Limit Min (Amps)
(Engineer Menu ? -> Current Limit ? -> min current) 最小輸出電流
當控制器內部溫度達80ºC時, 控制器可輸出之最大電流 (安培).
設定範圍: 1 ~ Current Limit Max

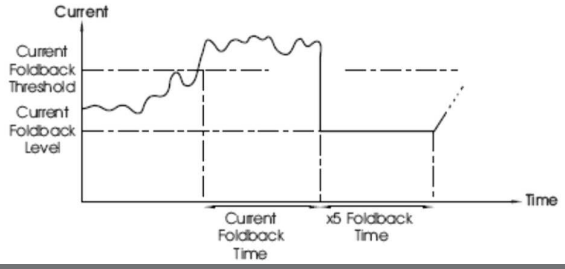


Motor

Current Foldback Threshold 電流保護門檻
若電流持續輸出在此門檻以上持續一段時間, 則控制器將主動限電流以進行保護。

Current Foldback Time
(Engineer Menu ? -> Timed Foldback ? -> stall time) 超過電流門檻之最大容許時間
若在門檻之上的持續電流輸出, 超過此一時間 (一般設定15秒), 則進入限電流保護。

Current Foldback Level
(Engineer Menu ? -> Timed Foldback ? -> level)
可保護馬達之安全電流



Motor

Motor Compensation (Engineer Menu ? -> Compensation ?)
馬達電阻補償值
此參數依控制器與不同馬達之型態來“配對”設定，以達成諸如防止上坡倒滑等功能的最佳控制及操作。簡單的 說， 此參數在補償因電阻所產生之功率損失。
此參數可設為0至500 mΩ ，每一增減值為 5 mΩ。

Invert M1 Direction
(Engineer Menu ? -> Invert Motors ? -> invert right) 改變左馬達轉向

Invert M2 Direction
(Engineer Menu ? -> Invert Motors ? -> invert left) 改變右馬達轉向

Motor Swap (Engineer Menu? -> Swap Motors ?) 左右馬達互換

Motor

Demand Clipping (R-net) 使用R-NET驅動邏輯

設定為”Off”時，表示採用控制器標準驅動邏輯。
設定為”On”時，表示採用第二驅動邏輯(R-net)。
在某些輪椅的應用中，設定為”On”時，有助於高速操作的穩定性。

Demand clipping is necessary to ensure good speed and direction controller of the wheelchair in all circumstances, including heavy loads and low battery conditions.

Off If set to Off it uses the standard controller algorthm

On If set to On it uses the R-net version of the demand clipping algorithm.

If some wheelchair application setting the parameter On can allow higher speeds to be maintained when making regular course adjustments.

Motor

Toque (%) (Torque ?) 低速扭力

數值加大時，可提升輪椅於低速行駛時之扭力

The Torque parameter boosts the current to the motors at low speed settings.

If themotor is stalled, for example, the wheelchair is stuck against an obstacle, such as a door threshold; then this will be automatically detected and the current to the motors will be increased, allowing the obstacle to be overcome.

Torque can be set between 0% and 100%

A value of 0% means the Torque parameter has no effect.

Higher values mean that more current will be permitted in the described stall conditions.

Motor

Tremor Damping (%) (Tremor Damping?)
設定搖桿對短暫偏移時的不敏感度
削弱手顫抖對搖桿之影響

This parameter allows the effects of hand tremor to be reduced.
If the user has a condition that results in hand tremor, then increasing the value of Tremor Damping will reduce the effect of the tremor, making the wheelchair more controllable.
Tremor Damping can be set between 0% and 100%
A value of 0% means Tremor Damping has no effect.
Note, even at this value, there is inherent damping in the control system. Higher values apply a higher level of The higher Tremor Damping is set the slower joystick response will become.

Motor

Joystick Stationary Time (Mins) 搖桿靜置計時器
Joystick Stationary Range 搖桿靜置的容許誤差範圍
當操縱桿被靜置在遠離中心點的某一位置且超過一定時間時，控制器可認定此一動作為意外操作或操作後遇到意外，而自動切斷馬達輸出。
Joystick Stationary Time (Mins)
設定範圍：0~60分鐘,每1分鐘為一單位。
0%：關閉此功能。
Joystick Stationary Range
設定所謂靜置狀態，操縱桿移動的容許誤差範圍。當操縱桿的移動超過這個範圍，靜置計時器將會被歸零。

Lights

Lamp Voltage 設定燈控系統電壓
(12V or 24V)

Indicator Wattage 方向燈號
(0 = 5W, 1 = 10W, 2 = 21W)
燈控系統之最大電流限制如下
照明燈(大燈及尾燈)：1.75A
方向燈：3.5A

Indicator Fault Detect 是否執行燈號故障檢測

使用LED燈號時，參數部份之設定為
Lamp Voltage: 24V
Indicator Wattage: 5W
Indicator Fault detect: off

Factory

Abs Forward Acceleration (Max / Min) 絕對前進加速度
此組參數限制前進可使用之最大及最小加速度，數值越大加速越快。
參數之數值代表控制器可提供最大加速度之百分比(0%~100%)。

Abs Forward Deceleration (Max / Min) 絕對前進減速度
此組參數限制後退可使用之最大及最小減速度，數值越大減速越快。
參數之數值代表控制器可提供最大減速度之百分比(0%~100%)。

Abs Turn Acceleration (Max / Min) 絕對轉彎加速度
此組參數限制轉彎可使用之最大及最小加速度，數值越大加速越快。
參數之數值代表控制器可提供最大轉彎加速度之百分比(0%~100%)。

Abs Turn Deceleration (Max / Min) 絕對轉彎減速度
此組參數限制轉彎可使用之最大及最小減速度，數值越大減速越快。
參數之數值代表控制器可提供最大轉彎減速度之百分比(0%~100%)。

Factory

Abs Min Power 輸出動力之最小絕對值

限制可運用之最小輸出動力絕對值，數值越大輸出之動力越大
參數之數值代表控制器可提供最大動力之百分比(0%~100%)。

Abs Forward Speed (Max / Min) 絕對前進速度

此組參數限制前進可使用之最大及最小速度，數值越大加速越快。
參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Abs Reverse Speed (Max / Min) 絕對後退速度

此組參數限制後退可使用之最大及最小速度，數值越大加速越快。
參數之數值代表控制器可提供最大速度之百分比(0%~100%)。

Abs Turn Speed (Max / Min) 絕對轉彎速度

此組參數設定轉彎可使用之最大及最小速度，數值越大加速越快。
參數之數值代表控制器可提供最大轉彎速度之百分比(0%~100%)。

Advance

Low Forward (Forward Taper ? -> low forward)
Soft Forward (Forward Taper ? -> lsoft fwd)
Low Backlash (Backlash Taper ? -> low backlash)
Soft Backlash (Backlash Taper ? -> soft bklash)
Low Spin (Turning Taper ? -> low turn)
Soft Spin (Turning Taper ? -> soft turn)

為PG內定參數無須修改

試車

Step 0. 以下參數請於試車前先行確認 (請先將控制器恢復到原廠設定值)

a. 設定最大前進速度(Max Fwd Spd) 初始值為100% 。
中輪或前輪驅動輪椅時，前驅修正參數(Engineer Menu ? -> Front Drv Rate ?)初始值為100% 。

b. 電動輪椅之測試條件
(1) 冷車 (馬達溫度與室溫相同) 。
(2) 電瓶滿電 (電瓶電壓25.7V以上) 。
(3) 10°以上之坡度。
(4) 速度檔設定在5檔。

Step 1. 設定馬達補償 (Engineer Menu ? -> Compensation ?)

a. 正向前進開上斜坡並在坡道中放開搖桿停車。
b. 若輪椅於停止後又下滑，表示馬達補償值不夠大。請以每次加5的大小，增加馬達補償，直到輪椅可以在斜坡上停穩且不後滑。
c . 若放開搖桿後,輪椅於停止後又再次反而向上抖動，表示馬達補償值過大。請以每次減5的大小，降低馬達補償，直到輪椅可以在斜坡上停穩。
d. 每次改變馬達補償後，須讓輪椅回到平地停下。控制器會在再次啟動後使用新的設定值。

目標：輪椅於斜坡停止時，可順利停於預定地點，沒有被再牽引向上的感覺，也不會下滑的狀況。

試車

Step 2. 加速度(Acceleration ?)

a. 正向從斜坡向上啟動
b. 如果輔助輪在啟動瞬間離開地面，表示加速度太大。請以每次減2的大小，降低加速度。
c. 如果輪椅在啟動瞬間會先下滑後才能上坡，表示加速度太小。請以每次加5的大小，增加加速度。

目標：輪椅在坡道起步平順

Step 3. 前進速度 (Forward Speed ? -> max fwd spd)及倒車速度(Reverse Speed ? -> max rev spd)，最大輸出電壓 (Output Voltage by Mob. PCP)

a. 實測實際車速，並依需求將速度調整適當之百分比。
b. 前進速度已調整到100%仍無法達到全速時，請加大最大輸出電壓 。最大輸出電壓以不超過24V為原則。
c. 當最大輸出電壓已達24V且前進速度已達100%仍無法達到全速時，請重新檢討馬達轉速、齒輪減速比及車輪直徑是否適當。

目標：符合原設計規格

試車

Step 4. 減速度(Deceleration ?) 及倒車減速度(Engineer Menu ? -> Soft Reverse ?)

a. 正向從斜坡向下行駛後釋放搖桿，準備在斜坡停車。
b. 如果有急煞打滑(後驅車)或點頭(前驅或中驅車前傾) ，表示減速度太大。請以每次減5的大小，降低減速度。
c. 倒車從斜坡向下行駛後釋放搖桿，準備在斜坡停車。
d. 如果前輔助輪離地，表示倒車減速度太大。請以每次減5的大小，降低倒車減速度。
e. 在平地上前進或倒車行駛到最高速後後釋放搖桿，準備在平地停車。
f. 如果有煞車距離太長，表示相關減速度太小。請以每次加2的大小，增加各減速度。

目標：符合原設計規格

Step 5. 轉彎速度 (Turning Speed ? -> max turn spd)及換向減速度(Engineer Menu ? -> Fast Brake Rate?)

a. 直線行駛後，向正右(左)急轉。
b. 如果感覺車速突然降低，表示轉彎速度太小。請以每次加2的大小，增加轉彎速度。

目標：輪椅在轉彎時，感覺平順。盡可能維持在最小值。

試車

Step 6. 轉彎加速度 (Turn Accel’ n ?)及轉彎減速度 (Turn Decel’ n?)

a. 以S形前進行駛。
b. 如果感覺轉向不夠靈活，則同步加大轉彎加速度 及轉彎減速度。

Step 7. 轉彎減速度 (Turn Decel’ n?)

a. 搖桿推向正右方進行原地右轉，到達全速後釋放搖桿。
b. 停車時如感覺煞車遲緩，表示轉彎減速度太小。請以每次加2的大小，增加轉彎減速度。
c. 停車時如感覺煞車猛烈，表示轉彎減速度太大。請以每次減5的大小，降低轉彎減速度。

試車

Step 8. 轉彎速度 (Turning Speed ? -> max turn spd)

a. 搖桿推向正右方進行原地右轉，到達全速後，
將搖桿沿最外緣逐步向正前方推動。

b. 如果感覺輪椅車有失速甩尾的情形，表示轉彎速度太大。
請以每次減2的大小，降低轉彎速度。

目標：輪椅在操作過程中，不會甩尾。

Step 9. 前驅修正參數

(Engineer Menu ? -> Front Drv Rate ?)

a. 沿邊長約5公尺的正方形外緣行駛，觀察每一轉向的操控靈敏度。

b. 如果感覺轉彎時搖桿已動但輪椅轉向的反應速度較慢，表示前驅修正參數太大。請以每次減5的大小，降低前驅修正參數。

Step 10. 確認

重複Step 5 ~ Step 10，以確認輪椅性能符合需求。

試車

Step 11. 前進最小速度 (Forward Speed ? -> min fwd spd)，
倒車最小速度 (Reverse Speed ? -> min rev spd)，
轉彎最小速度 (Turning Speed ? -> min turn spd)，
最小加速度 (Engineer Menu ? -> Min Accel ‘n % ?) ，
最小減速度 (Engineer Menu ? -> Min Decel’ n % ?) ，
轉彎最小加速度 (Engineer Menu ? -> Min Turn Acc % ?)，
轉彎最小減速度 (Engineer Menu ? -> Min Turn Dec % ?)

每次試車時，盡量不要超過30分鐘，以避免在馬達過熱的狀況下持續調整參數，得到不適當的設定結果。

Programming

PG Power Box

PC

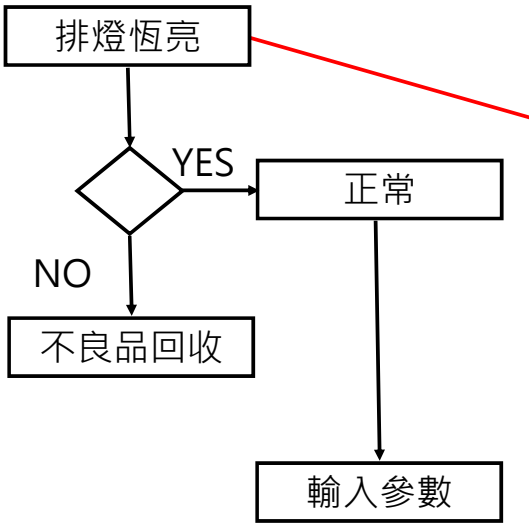
VR2

PG PC Programmer

Programming

a. 關閉電源盒電源
b. 連接電源盒及控制器

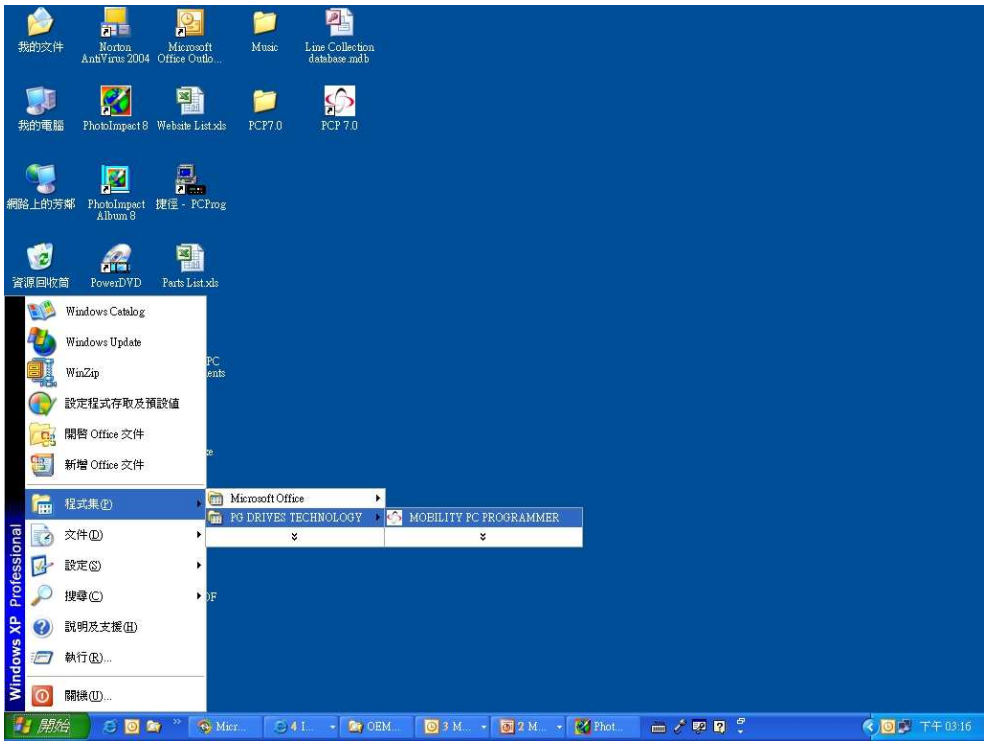
Programming



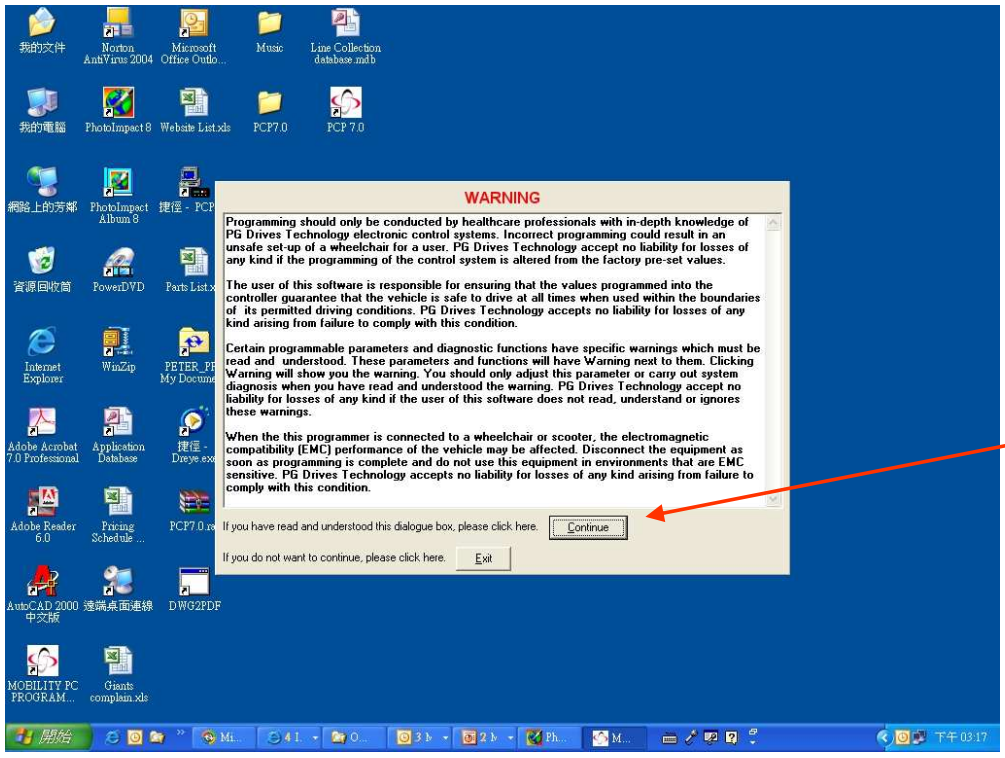
LiNE PROGRAMMING

Programming

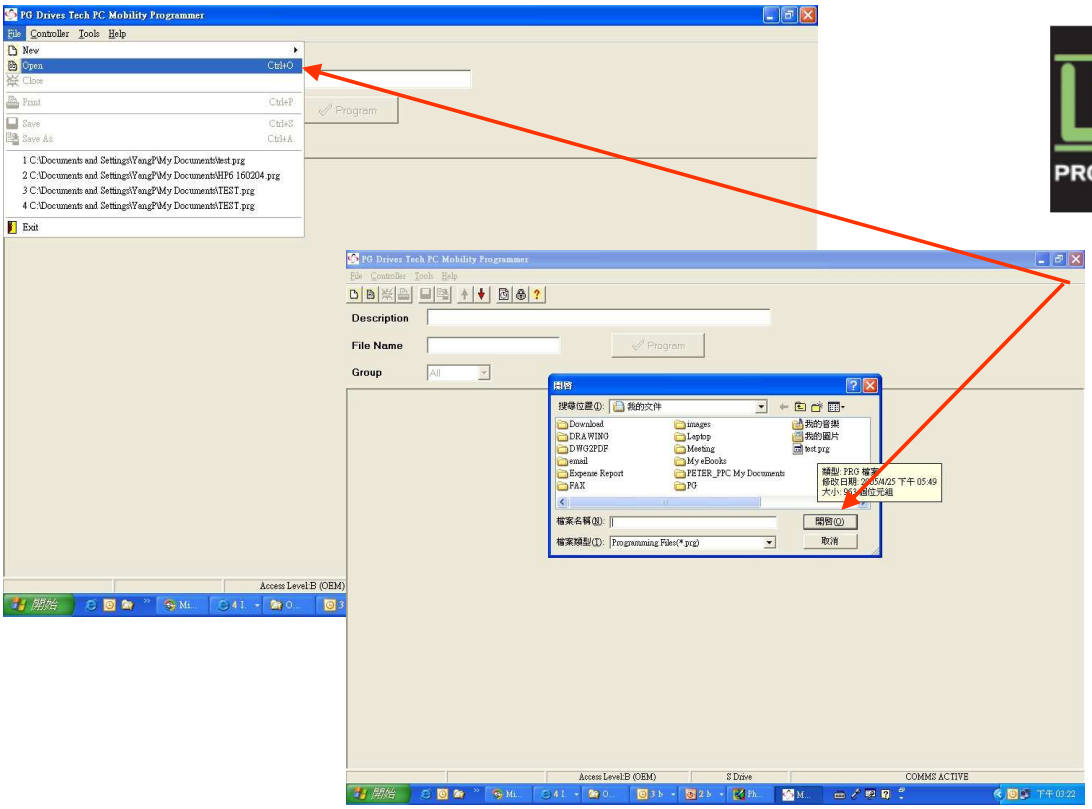
Programming



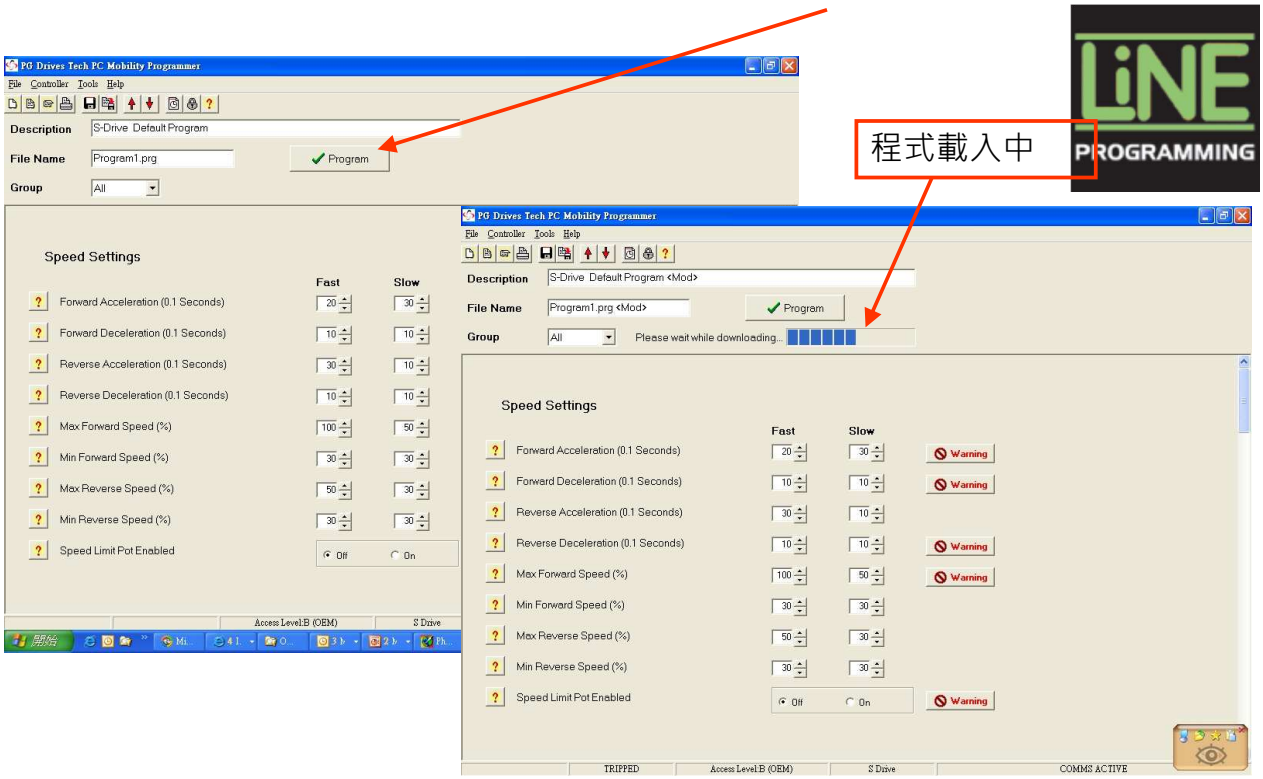
Programming



Programming



Programming



Programming

- 點擊Program按鈕 - 圖 1
  編碼完成後拔除電纜並點擊OK。
- 重新連接程式電纜。
- 選擇TOOLS選項單中的System Log選項， - 圖 2 ，清除系統日誌（System Log）和控制日誌 (Control Log)。 - 圖 3
- 切斷電源盒供電 (OFF)並將控制器移除。

圖 1

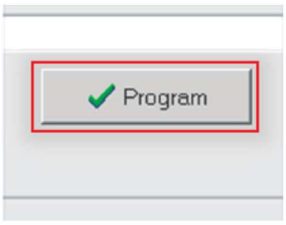


圖 2

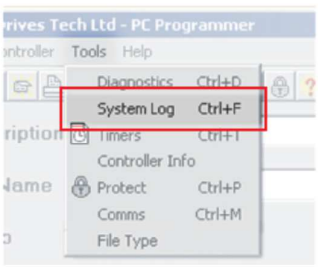
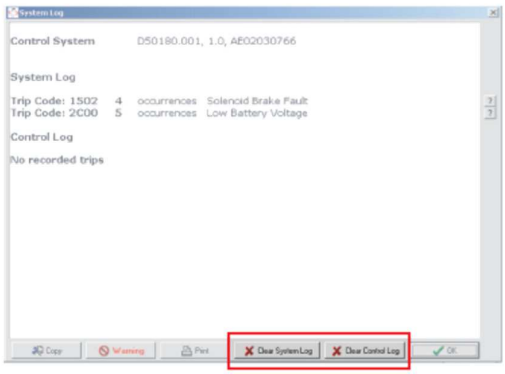


圖 3



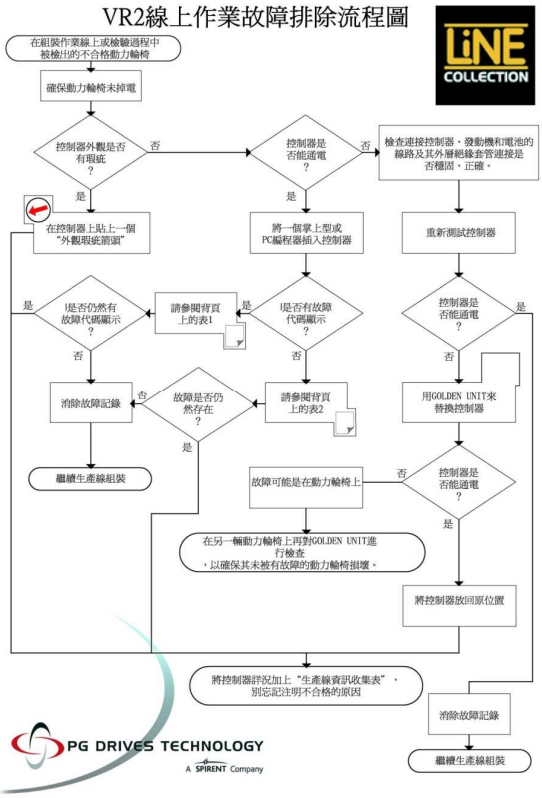
Line Collection

1. 每月,由客戶填表詳述不良品資料,並傳送PG
2. PG將安排至貴工廠取貨
3. 不良品退還後可選擇維修後送回或於下次訂貨時折扣貨款

優點

1. 不用負擔退修運費
2. PG安排各項運送過程,節省您寶貴的時間
3. 退款表示您的資金不用套在不良品上

Line Collection



Line Collection

1 Bar 低電壓 Battery Need Charging

2 Bar 左馬達斷線 L.Motor Bad Connection

3 Bar 左馬達短路 L.Motor Short Circuit

4 Bar 右馬達斷線 R.Motor Bad Connection

5 Bar 右馬達短路 R.Motor Short Circuit

6 Bar 充電限速中 Speed Inhibit, Could be Charging Inhibit

7 Bar 操縱桿可能故障 Joystick Fault

8 Bar 控制器可能故障 Controller Fault

9 Bar 電磁煞車故障 S.Brake Bad Connection

10 Bar 電池電壓過高 Excessive Voltage, Battery Poor Connection

7 Bar + S 操縱桿通訊不良 Communication Fault

8 Bar + A 電動缸故障 An Actuator Trip

Blink 休眠狀態 Sleep Mode

Charge Step 充電中 Charging

Ripple 操縱桿未置中 Joystick Not Centralized

Trip Code	Trip Type	Description & Reference
0A00	-	Controller in Sleep Mode - 3.18
1320	-	Timed Foldback Active - 3.16
1D05	7	JS Time Exceeded - 3.7
1500	9	Solenoid Brake Trip - 3.9
1505	9	Left Solenoid Brake Trip - 3.9
1506	9	Right Solenoid Brake Trip - 3.9
1600	10	High Battery Voltage - 3.10
1E03	Charging	Refer to section – 3.6
1E04	6	Refer to section – 3.13
1E05	Charging	Refer to section – 3.14
2C00	1	Low Battery Voltage - 3.1
2C02	-	Low Battery Lockout - 3.1
2F00	User	Refer to sections 3.7 & 3.11
3B00	2	Left Motor Disconnected – 3.2
3C00	4	Right Motor Disconnected – 3.4
3D00	3	Left Motor Wiring Trip – 3.3
3D01	3	Left Motor Wiring Trip – 3.3
3E00	5	Right Motor Wiring Trip – 3.5
3E01	5	Right Motor Wiring Trip – 3.5
4401	8	Control System Trip – 3.8

Trip Code	Trip Type	Description & Reference
5400	7+S[1]	Communications Trip -3.12
7A03	A Only[2]	Actuator Motor Wiring Trip -3.15
7100	7	Joystick Trip – 3.7
7101	7	Joystick Trip – 3.7
7102	7	Joystick Trip – 3.7
7103	7	Joystick Trip – 3.7
7104	7	Joystick Trip – 3.7
7105	7	Joystick Trip – 3.7
7107	7+D[3]	Refer to sections 3.19
7140	7+D[3]	Attendant Module Trip 3.19
7141	7+D[3]	Attendant Module Trip 3.19
7142	7+D[3]	Attendant Module Trip 3.19
7143	7+D[3]	Attendant Module Trip 3.19
7145	7+D[3]	Attendant Module Trip 3.19
7147	7+S[1]	Attendant Module Trip 3.19
7821	-	Thermal Foldback Active – 3.17
7825	-	Thermal Shutdown – 3.17
7902	-	Thermal Foldback Active – 3.17
All Other Codes	7 or 8	Possible Control System Trip – 3.7 &

Lince Collection

PG DRIVES TECHNOLOGY ASIA
台北市 105 敦化南路一段 25 號 4 樓
電話 +886 (0)2 2579 1821 - www.pgdt.com.tw

線上故障品回收申請表

請完成以下表格並傳至：email: cs_tw@pgdt.com -傳真: +886 (0)2 2579 8381

日期– 04 – 29 – 2005

聯絡資料：		包裝細節：	
聯絡人 –	xxxxx xxxx	需要回傳維修箱號?	☐
公司名 –	xxxxxxxxxx	箱數–	1
聯絡電話 –	xxxxxxxxxxxx	總重量–	2kg
地址 –	xxxxxxxxxxxxx	材積–	40 X 25.5 X 15(cm)
	xxxxxxxxxxxxx		
	xxxxxxxxxxx		

控制器明細：

控制器種類 (VSI, S-Drive, Egis, etc.)	PG 產品編號 (Dxxxxx/x)	序號	退回原因
EGIS 110	D50238/1	25010184	10 BARS FLASHING
EGIS 110	D50238/1	45010195	WHILE CHARGING THE BATTERY, SCOOTER STILL CAN MOVE.
TRUCHARGE	D50066	P5010968	LED CANNOT BE ILLUMINATED

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