

VERMEIREN

operator control Shark

INSTRUCTION MANUAL



OPERATOR CONTROL SHARK

1. Use

The operator control built into your electric wheelchair enables you to control all the driving, steering, braking and operating processes and to control other adjusting motors (lifting column, seat and back adjuster). The wheelchair's electrical unit and electronics are constantly being monitored internally. Any fault in the electronics is indicated on the operator control and, if necessary, the wheelchair may be switched off for reasons of safety (see the "Error codes" section).

Vermeiren is responsible for the changes in the software. For changes in the software contact Vermeiren.

The Shark system is available in three different operator controls which have some different operating buttons.

Operator control type 1

Operator control type 2

Operator control type 3

- 1 = On/Off button
- 2 = Battery charge indicator
- 3 = Reduce speed ("Tortoise" symbol)
- 4 = Increase speed ("Hare" symbol)
- 5 = Speed indicator
- 6 = Attendant control unit
- 7 = Horn
- 8 = Service indicator (fault analysis)
- 9 = Left indicator light
- 10 = Right indicator light
- 11 = Hazard warning lights
- 12 = Lights
- 13 = Electrical adjuster for seat/back

Press the "ON/OFF" button **(1)**. The charge indicator **(2)**, which also indicates the batteries' charge level, lights up for a moment. If all the lights come on, the batteries are sufficiently charged. If the lights do not all come on, you must adjust your driving activities to suit the low capacity of the batteries. If the battery charger display lights do not come on, check the plug connections of the electronic system.

Now select the driving program you want by pressing the "Tortoise" **(3)** or "Hare" **(4)** buttons.

The selected speed can be set on the 5-level speed indicator **(5)**. If you have any special needs, you can ask your dealer to enter a personalised driving program.

To set the wheelchair in motion, push the joystick forwards slowly. The speed will increase when you push the joystick further forwards. If you want to turn left or right, simply push the joystick in the desired direction. To reverse, pull the joystick backwards from the central position.



Note that, when pressing the "ON/OFF" button, the joystick stays in the central position for at least two seconds. It is programmed this way for technical and safety reasons, to prevent the joystick being pushed at the same time as the wheelchair is being switched on. If both processes are activated at the same time, the steering unit locks itself and can only become operational again after being switched off completely.

Press the "Left indicator" **(9)** or "Right indicator" **(10)** buttons to signal a change in your driving direction. The driving lights are switched on or off by pressing the "Lights" **(12)** button. You can sound an acoustic warning signal with the "Horn" **(7)** button. The hazard warning lights, used in critical situations, can be switched on or off by pressing the "Hazard warning lights" **(11)** button.

To brake while driving, simply push the joystick to its central position. Move the joystick slowly for gradual braking. Simply release the lever for a quick stop; the wheelchair will then stop as quickly as possible.

To activate the back adjuster, select button **(13)** until the number 1 lights up, and you can then use the joystick to tilt the back in the direction you want.

To activate the seat incliner, select button **(13)** until the number 2 lights up, and you can then use the joystick to incline the seat in the direction you want.

1.1. Turn wheelchair On/Off

In case of an emergency, you can use the On/off button to turn your wheelchair off.

Turn the power on:



Press the On/Off button. All battery Gauge indicators will light.

Also the current battery charge or Lock Mode will be indicated with the battery charge indicator.

If the wheelchair is turned on while the joystick is out of neutral, an fault will be displayed on the battery charge indicator. Release the joystick back to neutral and the fault will disappear.

Turn the power off:



Press the On/Off button. All LED's will go out.

1.2. Locking your operator control

It is possible to lock your operator control so that unauthorized people can not turn your electric wheelchair on.

To lock your wheelchair:



While the power is ON, press and hold the ON/OFF button for 4 seconds.

The display will turn off immediately. After 4 seconds all LED's will go out and the horn give a short beep sound. The electric wheelchair will then turn off.

To unlock your wheelchair:



While your wheelchair is locked, press the ON/OFF button to turn your wheelchair on.

All LED's will light. The battery charge indicator LED'S will then perform a slow right-to-left chase.



Press the Horn button twice before the countdown is completed (approximately 10 seconds).

The current state-of-charge will then be displayed and SHARK may be operated normally.

If the user does not press the Horn button twice before the countdown is complete, the Horn will sound a short beep and your operator control will turn itself off.

You must complete these procedure completely otherwise your wheelchair will not drive again.

1.3. Using battery charge indicator



The battery charge indicator is used to indicate that your wheelchair power is on and provides an estimate of the remaining battery capacity.

Any green LED's indicate that your batteries are well charged.

If only amber and red LED's are light, the batteries are moderately charged. Recharge your batteries before you make a long trip.

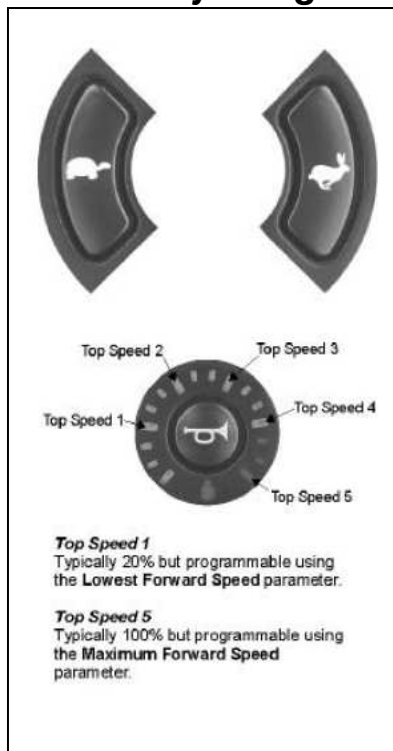
If only red LED's are light, the batteries are running out of charge. Recharge as soon as possible.

The following table indicates what the battery charge indicator will display.

Display	Description	Meaning	Remarks
	All LEDs dark.	System off.	
	All LEDs are lit.	System on.	LEDs show the charge level.
	Left red LED flickering.	Low battery level.	Charge battery immediately.
	Flickering in sequence from "right to left"	Unlock Shark system.	To unlock, press the horn button twice within 10 seconds after switching the steering unit on.

Display	Description	Meaning	Remarks
<p>Progress indicator</p>	Flickering in sequence from "left to right", showing charging level at the same time.	Shark is being programmed, is connected to the charger and/or is busy charging.	The flickering LEDs indicate the present loading status.
	All LEDs flickering slowly.	After starting the system, the joystick is not in the neutral position.	Put the joystick in the neutral position (let it go).

1.4. Adjusting the Driving Speed



The user can adjust the wheelchair's top speed to suit their preferences and environment. The currently selected top speed is shown on the Speed indicator and can be adjusted using the "Increase Speed" (Hare) and "Decrease Speed" (Tortoise) buttons.

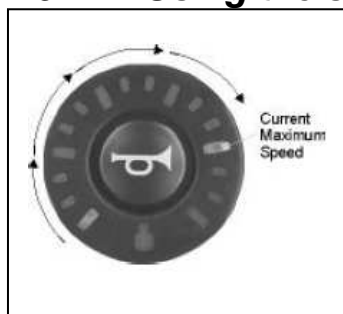
The 6 large LED's on the speed indicator represent 0%, 20%, 40%, 60%, 80% and 100% of the wheelchair's absolute maximum top speed.

Your operator control is foreseen of a "5 speed" mode.

In the "5 Speed" mode pressing the Increase Speed and Decrease Speed buttons steps between one of the 5 top speeds 20% to 100%.

Always adapt your speed to the prevailing environmental conditions.

1.5. Using the speedindicator



The Speed indicator is used to gauge the relative speed of the wheelchair in comparison to the maximum speed possible. The right-most LED indicates current maximum speed, which can be adjusted using the Increase (Decrease) Speed button. Using the joystick, as the speed of the chair increases, the LED's will fill in until maximum speed (as displayed) is reached.

If the bottom, left-most GREEN LED is flashing SHARK is in SPEED LIMIT mode, which limits the drive speed to a pre-programmed value, typically when a seat is raised or tilted and driving too fast may be dangerous.

1.6. Attendant Control



When the attendant control is activated, the ACU LED will light up and remain light until the attendant relinquishes control.

1.7. Using the horn



Press the horn button. The horn shall sound as long as the button is pressed.

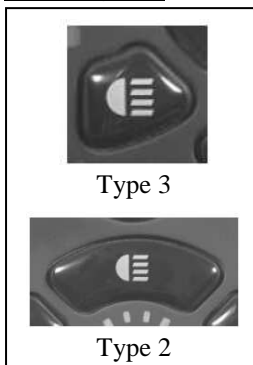
1.8. The Service indicator light



The Service indicator LED is dedicated to displaying fault codes. For a list of the of the fault codes refer to paragraph 3.

1.9. Using the lights (only for type 2 and 3 operator control)

Headlights:



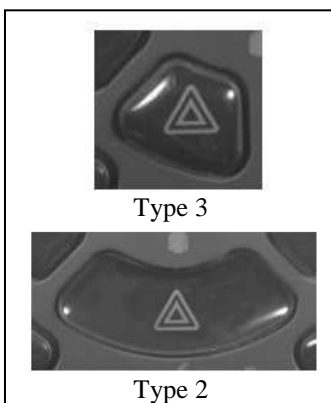
To turn the Headlights on, press the Headlight Button. The green LED beneath the keypad icon will light. Press the Headlight Button again to turn the headlights off.

Left and Right indicator lights:



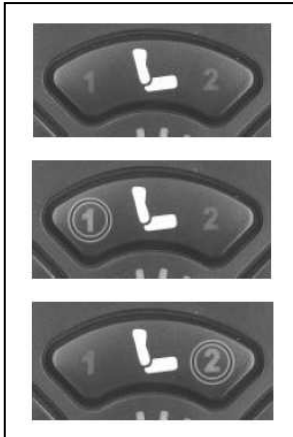
To indicate left or right turns, press the Left or Right Indicator Button as required. The green LED beneath the activated Light Indicator Button will flash. Press the Button again to turn the indicator off.

Hazard warning lights:



To turn the Hazard lights on, press the Hazard Button. The two green LEDs beneath the Left and Right Indicator buttons will both flash simultaneously. Press the Hazard button again to turn the hazard function off.

1.10. Using the Seat Function Button (only for type 3 operator control)



Two seat functions are available for individual adjustment and are accessed via the Seat Function Button.

Press the Seat button once to toggle the control unit from Drive mode to Seat mode. Seat Function 1 will be active as noted by the amber colored "1" LED.

To adjust Seat Function 1, use the joystick Forward/Reverse.

To access Seat Function 2, either press the Seat Function Button again or move the joystick right. The amber colored "2" LED will light. Use the joystick Forward/Reverse to set the Seat Function 2 adjustments. Moving the joystick left/right while in Seat Mode toggles between Seat Function 1 and Seat Function 2.

Pressing the Seat Function Button again (3 presses are a complete cycle) puts your wheelchair back in Drive Mode. Use the joystick to control speed and direction as normal.

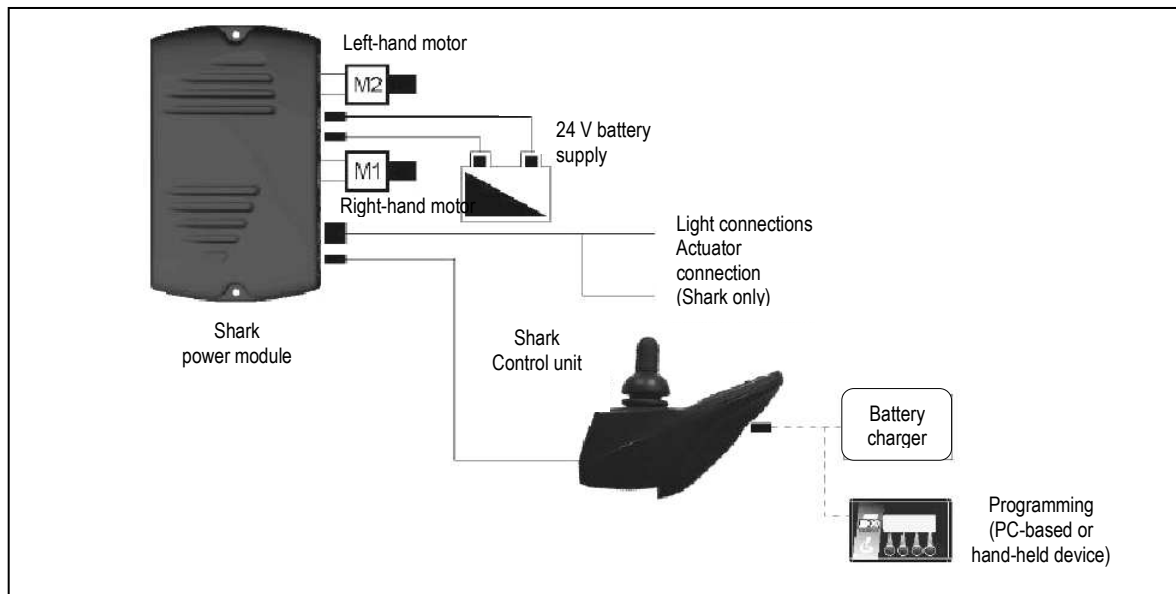
1.11. Using the Joystick



Moving the joystick will drive the electric wheelchair in that direction. The amount of joystick movement will determine the speed that the powerchair will move in that direction.

Make sure that the joystick is in the neutral (central) position when pressing the on/off button, otherwise the electronics will be locked. To take this block away let go the joystick until he goes back in neutral position.

2. System connections





3. Error codes



Symbol flickering fast at intervals. The number of flashes per interval provides the information below (the following actions and checks should only be carried out by authorised individuals).

Number	Problem/Fault	Checks
0	There is no indication of the charge level of the batteries after the steering unit is switched on.	<ol style="list-style-type: none"> 1. Check whether the battery plug is inserted fully and correctly connected to the socket of the steering unit. 2. Check whether the two batteries are connected correctly. 3. Check whether the batteries are charged. 4. Check whether the fuses of the steering unit and the batteries are defective or have burnt out.
1	Operating error	<ol style="list-style-type: none"> 1. Possible safety shut down or operating error (joystick) 2. Put the joystick in neutral position and restart the system.
2	Battery error	<ol style="list-style-type: none"> 1. Check batteries and cabling; if necessary charge. 2. If necessary, replace batteries.
3	Left motor (or its connection) is defective.	<ol style="list-style-type: none"> 1. Check whether the plugs of both motors have been inserted properly. 2. Check the plug contacts of both motors for corrosion or damage. 3. Check both motors. Unplug the motors and measure the plug connection with an Ohm meter. If you obtain readings of more than 1 Ohm or less than 100 milliOhms, the motor is defective. 4. Check the voltage difference between the motor and its housing. Measure every contact between the motor and its housing by means of an Ohm meter. If the resistance is less than 1 MegOhm, the motor is defective. 5. Check the condition and function of the carbon rods of both motors. <p>N.B: If a fault is indicated in one motor, the other one could also be defective. ⚠ A fault is also indicated if the 350W motors are disconnected. Connect them back up and restart the system.</p>
4	Right motor (or its connection) is defective	As described above.
5	Left parking brake (or its connection) is defective	<ol style="list-style-type: none"> 1. Check whether the plugs of the motors have been inserted. 2. Check the plugs for corrosion or damage. 3. Check the parking brakes. Measure the resistance of the connections by means of an Ohm meter. If the resistance is larger than 100 Ohms or less than 20 Ohms, the parking brake is probably defective.
6	Right parking brake (or its connection) is defective	As described above.
7	Shark control is defective	<ol style="list-style-type: none"> 1. Unplug both motors. Switch the steering off and then on again, while leaving the joystick in the neutral position. If this flashing sequence appears again, the steering is defective. 2. Unplug both motors. Again switch the steering off and on while leaving the joystick in the neutral position. Then briefly push the joystick in any arbitrary direction. If the steering relay then clicks twice and a fault is indicated in the left motor, the steering is in order. If any other fault is indicated and the steering relay does not click twice, the steering is defective. 3. Check the motors as described above in 3. and 4. <p>N.B: If a fault is shown in one motor while driving, it could be indicated as a steering fault.</p>
8	Shark – PM defective	<ol style="list-style-type: none"> 1. Check the cables and plugs for corrosion and damage. 2. Check the BUS connecting cable (resistance). 3. Replace the PM.
9	Shark communication error	<ol style="list-style-type: none"> 1. Check the cables and plugs for corrosion and damage. 2. Check the BUS connecting cable (resistance). 3. Replace the PM. 4. Replace the shark control.
10	Unknown error	<ol style="list-style-type: none"> 1. Check the cables and plugs for corrosion and damage. 2. Check the BUS connecting cable (resistance). 3. See the manufacturer.
11	Incompatible steering unit	<ol style="list-style-type: none"> 1. Incorrectly programmed and incompatible steering (depending on system). 2. Check whether the programming of the PM and steering unit agree with each other.



Notes

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