



User manual

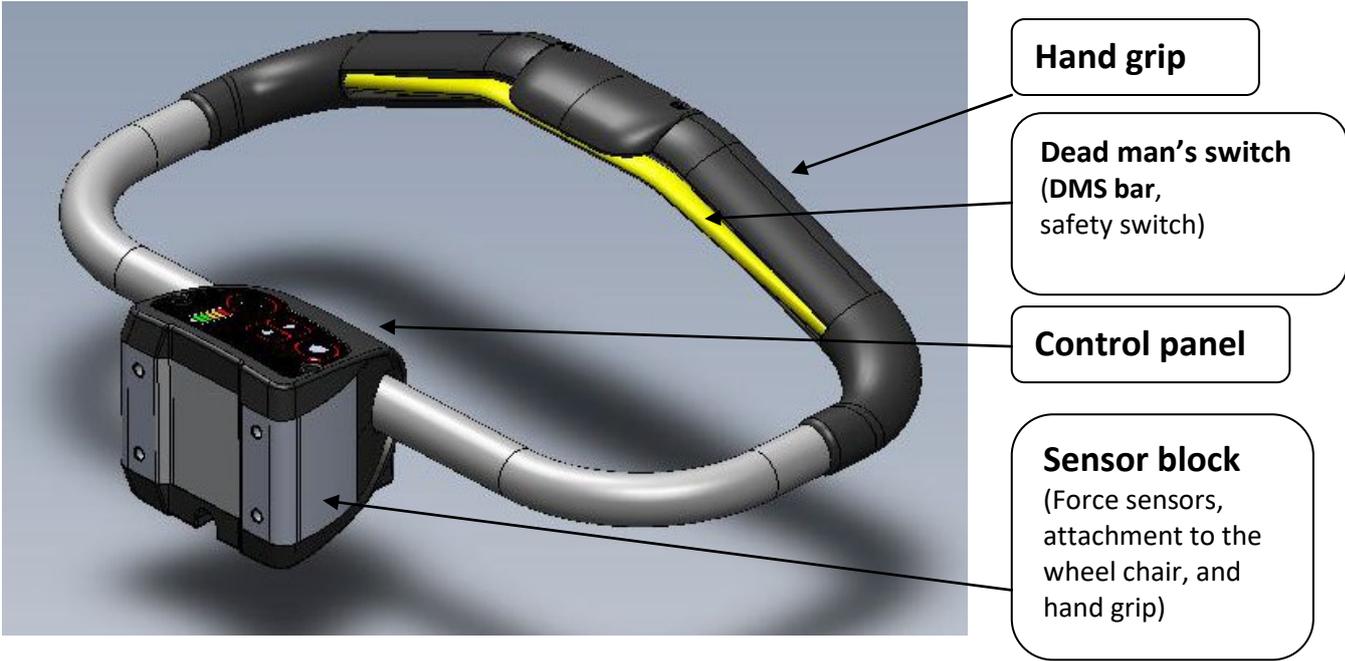
Simplex



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Intuitive attendant control



The force sensing control handle can be used for intuitive control of electric wheelchairs.

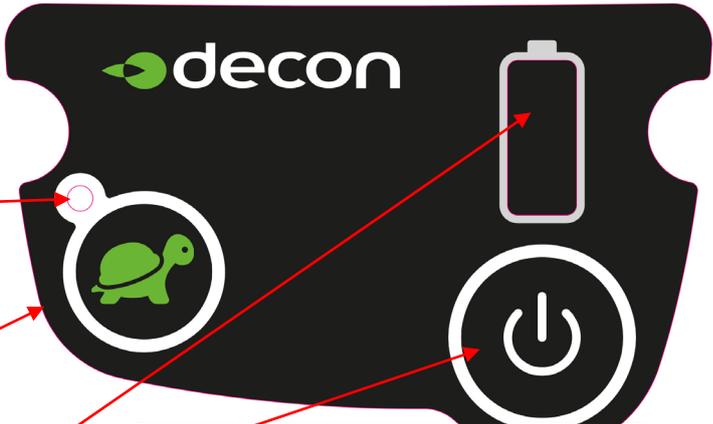
Force sensors and control electronics are integrated in the sensor block. Force sensors function like electronic scales. It is therefore important that no force is applied to the hand grip when starting the system. Either the dead man's switch must be active when starting. The DMS is checked and driving inhibited if it is active from the start.

Control Panel

The green indicator lamp (LED).
Steady light indicates low speed mode.
Flashing indicates warning/alarm.
No light indicates normal speed mode.

Control button for low speed

Battery scale. Steady light indicates remaining battery capacity. Flashing is



Start button. A short press will start the system. (Wait about 2 seconds before driving.) Press again = stop

Driving

When the system is started with a short press on the start button, the wheel chair is ready for operation after approx. 2 seconds. Grip then the hand grip, including the DMS bar and go where you want. The force sensors in the control handle adjust both speed and course to your desired values. The driving will be smoother if you are a little soft in the arms during the operation.

Automatic temperature compensation

Neutral values for the force sensors are stored in the electronic memory of the control handle. These values are used as a reference when the system detects how much force is affecting the control handle. The neutral values of the sensors and the built-in amplifiers can slightly be affected by temperature variation. The electronics have an automatic update of temperature compensation. Each time the DMS bar is released, while driving, and sensor values have been stabilized, the reference values are slightly adjusted, if necessary. When the control unit is closed, new reference values and corresponding temperature are stored in the system memory. Such storage is indicated by two short flashes of the green LED. In this way, the system keeps track of any temperature operation.

Security check at startup

The reference values are checked at each start with ON/OFF. This means that the control handle must be left untouched for a few seconds after starting. If the neutral values of the sensors then are too far from zero, the green lamp next to the snail button will flash quickly (4 Hz = 4 times per second). Driving is then blocked and the system will wait until the sensor values are close enough to zero. The reason of this blocking of driving can be that the control handle during start up of the system is affected by a force. It can be that you hold the control handle or that something is hanging on the handle. Remove this and the green latch signal will stop flashing and the wheelchair can be driven.

If the control handle would be exposed to strokes or violent force, the neutral values of the force sensors could be changed so much that the flashing warning does not cease. Then a manual calibration is required, in accordance with the following instructions.

Manual calibration of the system

Keep the DMS bar activated during the start of the system. This means that the green LED starts to flash slowly (1 Hz). Continue holding the DMS bar pressed for about 5 seconds until the green LED starts flashing faster (2 Hz). Release the DMS bar and let the control handle be unaffected until the green LED stops flashing (after about 10 seconds). Then new reference values are stored in the permanent memory together with the actual temperature.

Error indication, troubleshooting

We have previously described the error indication/warning that is shown by means of the green indicator lamp next to the low speed button. Also the battery scale indications can display codes that can be helpful in troubleshooting.

If all or part of the battery scale is flashing, it means that an error exists in the wheelchair's electrical system. Each segment in the scale represents a different error indication as shown in the following table:

- 1 segment is flashing slowly (red bottom) = battery is almost discharged
- 2 segment is flashing quickly (red and yellow) = decoupling is mechanically released

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