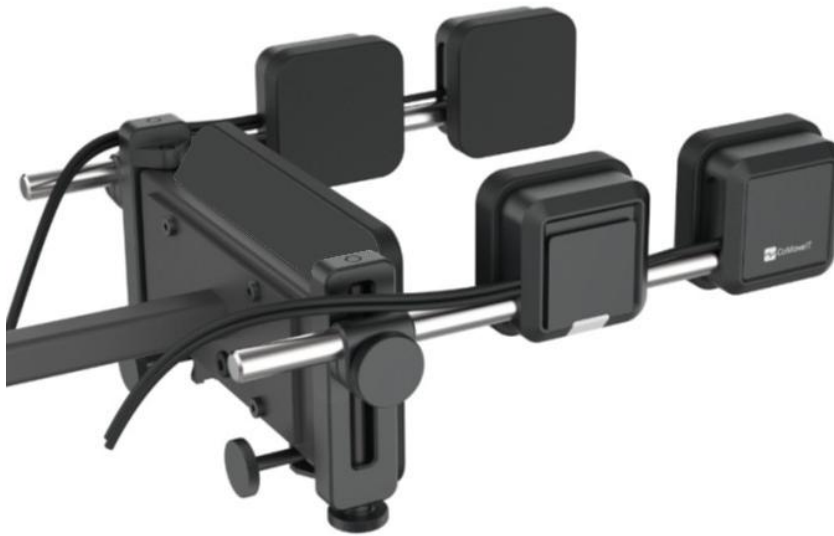




CoMoveIT

CoMoveIT Drive

Specialty Input Head Control Device for Powered Wheelchairs



Installation Instructions

How to contact CoMoveIT?

	CoMoveIT NV, Baron Ruzettelaan 5/1.1, 8310, Assebroek (Bruges), Belgium www.comoveit.com info@comoveit.com +32 477 880 175
CH REP	SKS Rehab AG, Im Wyden 3, CH-8762, Schwanden, Switzerland
UK Responsible Person	UK REP MED Limited, Unit D Crondall Place, Coxbridge Business Park, Alton Road, Farnham, GU10 5EH, United Kingdom

Produced and published by CoMoveIT, Belgium

Version 1.0, 2026-05-15

Article no.: CM0120-INST-EN

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Important information about these Installation Instructions

Before installing this product, it is important to read these Installation Instructions and in particular the Safety Instructions. They also contain important safety and maintenance information, as well as describe how to use the product in the best way.

Make sure to store these Installation Instructions for future reference.

All information, pictures, illustrations, and specifications are based upon the product information that was available at the time that these Installation Instructions were printed. Pictures and illustrations that are found in these Installation Instructions are representative examples and are not intended to be exact depictions of the various parts of the product. CoMoveIT reserves the right to make changes to the product without prior notice.

You can find the latest version of this document on www.comoveit.com.

Serious incidents

SERIOUS INCIDENTS

In case of adverse or serious incidents causing human injury, this should be reported as soon as possible to CoMoveIT (vigilance@comoveit.com) or your local distributor, and to the competent authority of the Member State in which the user is established.

Support, scrapping and spare parts

Technical support

In the event of technical problems, contact your local distributor or CoMoveIT at +32 477 88 01 75 or via info@comoveit.com.

Always state the Reference and Serial Number of the product to ensure that the correct information is provided.

Scrapping



CAUTION

Follow the local waste legislation for scrapping. Dispose of obsolete electronic parts responsibly in accordance with local recycling regulations.

Spare parts and accessories

Contact CoMoveIT for information about and to order spare parts consumables or accessories.

Warranty

CoMoveIT warrants CoMoveIT Drive to be free from defects in material and workmanship for a period of two years under proper use, care and service.

All warranties will cover parts only and do not extend beyond the initial purchaser from an authorized CoMoveIT dealer. Normal wear and tear and consumables are always excluded from the warranty.

Commencement of Warranty Period

The warranty of CoMoveIT Drive begins on the date that the product is first delivered to the customer, or forty (40) days from the date that the product is shipped to the authorized distributor by CoMoveIT, whichever comes first.

Repair or Replacement

For warranty service, customers should contact the authorized distributor from whom the product was purchased. In the event of a defect in material or workmanship, the distributor must obtain a return authorization number from CoMoveIT, and the product must be shipped to a service center designated by CoMoveIT. CoMoveIT will repair or replace any product covered by the warranty. This warranty does not include any labor charges or shipping charges incurred in replacement for installation or repair.

Amendments

No person is authorized to change, extend, or waive the warranties of CoMoveIT. Warranty shall only be extended as necessary to comply with state laws and requirements.

Voiding of Warranties

The above-mentioned warranties are depended to proper use, maintenance, and care of the product. The warranty will be void if the product has been used improperly or if it has been repaired or any part replaced by persons other than CoMoveIT or an authorized CoMoveIT distributor.

The addition of equipment, peripherals or features that are not manufactured or recommended by CoMoveIT could affect the intended function of CoMoveIT Drive product.

The use or installation of equipment not issued or accepted by CoMoveIT invalidates the warranty.

Safety Rules

General

Read the [Installation Instructions](#) carefully, paying particular attention to the safety instructions and the warning texts.

Follow the instructions in order to prevent the risk of accidents from use.

All alterations to and interventions of the product must be performed by a qualified service engineer. In case of doubt, always contact CoMoveIT.

All information and specifications included applied at the time of delivery of this product. CoMoveIT reserves the right to make changes without prior notification.

Warning labels

These Instructions for Use [and these Installation Instructions](#) utilize the following warning labels, which are intended to draw attention to situations that could lead to unwanted problems, personal injury, or damage to the wheelchair, etc.

 CAUTION
Please use caution where this symbol appears. A situation could result in minor or moderate injury.

 WARNING!
Please use extreme caution where this warning symbol appears. Failure to observe warnings can lead to serious injury or death.

General Warnings and Cautions

 WARNING!
Do not attempt to operate a powered wheelchair with the CoMoveIT Drive without the assistance, training and permission from a qualified healthcare professional.

 WARNING!
The wheelchair must be fitted with an emergency stop function that is within the reach of the attendant. Users who are unable to operate an emergency stop button should have an accompanying person with them at all times.

 WARNING!
Stop using the device immediately if it is behaving abnormally or erratically.

 WARNING!
The device may inadvertently activate when exposed to rain, causing the wheelchair to drive in an unintended manner, creating a dangerous situation.

 WARNING!
Electromagnetic Compatibility (EMC) This product complies with the limit values for Electromagnetic Compatibility (EMC) with respect to powered wheelchairs, as set out in ISO 7176-21. This device can disturb the operation of devices in its environment that emit electromagnetic fields (e.g. alarm systems, automatic doors, etc.). The driving performance of this device can be influenced by electromagnetic fields (e.g. those emitted by electricity generators or high-power sources).

 WARNING!
Do not bump against other objects, do not compress or squeeze any parts of your device.

 WARNING!

In case of critical fault, the device may come to a sudden stop at any time during operation.



WARNING!

Disconnect the DB9 connection of CoMoveIT Drive from the wheelchair controller or dismount the CoMoveIT Drive headset, when servicing the wheelchair batteries.



CAUTION

CoMoveIT accepts no liability for personal injury or property damage that may arise from the failure of the users to follow the indications, recommendations, warnings, cautions, and instructions given in this Instructions for Use document.



CAUTION

Do not press the head pads using sharp objects. This will affect the operation.



CAUTION

Obsolete parts of CoMoveIT Drive should be responsibly disposed according to local recycling regulations.



CAUTION

The maximal forces applied on the head array in any direction are specified to be up to 170 newtons.

List of Symbols

All symbols used in the labeling of CoMoveIT Drive are in accordance with ISO 15223-1:2021 Medical devices

Symbol	Description	Symbol	Description
	Consult instructions for use or consult electronic instructions for use		Keep away from rain
	Medical device		Protect from heat and radioactive sources
	Manufacturer		Handle careful to avoid damage
 YYYY-MM-DD	Country and date of manufacture		Don't used if the package is damaged or opened and consult instructions for use.
	Product reference number		Authorized representative e.g. for Switzerland
	Batch number		Local distributor
	Serial number		Don't discard as unsorted waste, send to separate collection facilities for recovery and recycling
 65°C 149°F -40°C -40°F	Storage temperature range		Conformity with European health, safety, and environmental protection standards.
 50°C 122°F -25°C -13°F	Operating temperature range		Protection against solid foreign objects ≥ 1 mm and against vertically falling water drops (IEC 60529).
	Unique device identifier		
  (01) (11) (21)	(01) Global Trade Item Number (10) Batch number: 6-digits: YYMM and 2-digit number (11) Date of Manufacture: 6-digit indicating year, month and date in the following format: YYMMDD. (21) Serial Number: 9-digit number		

Intended Use

CoMoveIT Drive is intended to be used as a specialty input control device for powered wheelchairs. CoMoveIT Drive allows users to control their powered wheelchair with their head.

CoMoveIT Drive captures pressure applied by the user on the head array and translates them into driving commands for the powered wheelchairs. CoMoveIT Drive offers multiple degrees of freedom for the adjustment of the head array and function and sensitivity per sensors are configurable by the supplier at installation.

Intended User Group

CoMoveIT Drive is intended to be used in adult and pediatric power wheelchairs for people who lack the ability to control the powered wheelchair via conventional means such as joysticks, chin controls and conventional head controls.

CoMoveIT Drive is intended to be used by people diagnosed with Multiple Sclerosis (MS), Amyotrophic Lateral Sclerosis (ALS), Tetraplegia, Spinal Cord Injuries (SCI), Cerebral Palsy (CP) and other complex movement disorders.

Contraindications

CoMoveIT Drive must not be used by individuals who have a severe mental disability, and are not able to follow and understand basic instructions, are diagnosed with severe visual impairment, or suffer from severe epilepsy. The user must be able to estimate and correct the results of actions when operating the wheelchair.

Environmental Conditions

Operation

- Operating temperature range: -25°C to 50°C // -13°F to 122°F
- Relative humidity: 10% and 90%.

	WARNING!
Do not use the device under rain. To assure the water ingress level of the CoMoveIT Drive, always leave the connection protection in place.	

Storage

- Recommended storage temperature range: room temperature
- Maximum temperature range: -40°C to 65°C // -40°F to 149°F
- Keep dry
- Keep away from sunlight and sharp objects.

Always conduct a functional check before using your device after a long-term storage.

Device Description

General

CoMoveIT Drive consists of a head array with five sensor pads. The sensors detect user-applied pressure and translate it into driving and other control commands for a powered wheelchair.

Identification of parts

Item picture	UDI (part number / GTIN), Product name, description
	UDI : 05430002911144 CoMoveIT Drive: Head array with 5 head pads with pressure sensors with one connection cable DB9 for input to the wheelchair controller

Mounting parts

One or more of the following parts have to be ordered with the CoMoveIT Drive.

Item picture	Part number, Product name, description
	UDI : 05430002911151 CoMoveIT Drive rod set • Vertical rod for head array mounting to wheelchair • Horizontal bar for head array adjustment (to be purchase separately from CoMoveIT Drive)
	UDI: 05430002911069 Head array Mounting Clamp: Mounting clamp for fixation and height adjustment – Fit for CoMoveIT Drive rod set on a.o. Permobil powered chairs. (to be purchase separately from CoMoveIT Drive)
	UDI: 05430002911090 Head array Mounting Clamp S: Mounting clamp for fixation and height adjustment – Fit for CoMoveIT Drive rod set on a.o. Sunrise Medical powered chairs. (to be purchase separately from CoMoveIT Drive)
	UDI: 05430002911168 Ball joint plate Drive: plate covering the back of CoMoveIT Drive for use with e.g. Bodilink ball joint (to be purchase separately from CoMoveIT Drive). Bodilink products are not sold by CoMoveIT.

Note: Only specified products shall be used with the device.

Spare parts and consumables

Spare Parts	
Item Picture	Part number and description
	Part number: A006619s 1x frontal Side pad (excluding cable and protective rubber) Note: Common part for left and right
	Part number: A006617s 1x Side pad with lever (excluding cable) Note: Common part for left and right
	Part number: A006615d 1x Head back pad including the sensor, without the metal frame
	Part number: S-CMD1-51 1x DB9 cable Drive

	Part number: S-CMD1-52 1x Drive CPU
Consumables	
	Part number: C-CMF1-01 2x Rotary knobs Back
	Part number: COM00065 1x Side pad silicone rubber cushion
	Part number: COM00066 1x Circumferential cushion Right Pad 1x Circumferential cushion Left Pad
	Part number: C-P032260 2x End stoppers 10mm
	Part number: COM0034 1x Back head cushion
	Part number: COM0008 1x Rotary knob of the vertical adjuster (Locking knob)
	Part number: AA62718 1x Lever for the horizontal adjuster (Lever M6x16)
	Part number: COM00102S 1 x Side pad cable

Features

Head control with 5 sensors: The system can be configured based on the abilities of the user. The function of each sensor is assigned by the supplier using a configuration program at installation.

Sensor positioning: The position of sensors on the head array can be adjusted in a high number of ways to optimize operation and comfort of the user.

Driving and non-driving functions: besides driving commands forward, reverse, left and right, the user can select “User Switch” to open the controller menu (e.g. to adjust seating position). Also “Relax” to change from driving mode to sleep mode can be selected.

Sensitivity adjustment for each sensor. The sensitivity range can be set individually, defining the minimum required and maximum permitted force to activate the assigned function.

Selectable switched or proportional control: Switched operates at a defined speed. Proportional control transfers increasing pressure into increasing driving speed.

Installation

 CAUTION
The Installation of CoMoveIT Drive has to be done by qualified personnel and according to the Installation manual which can be downloaded from www.comoveit.com

 CAUTION
Installation should only be done by individuals familiar with the process as there may be multiple mounting and fastening tools used to secure the product.

 CAUTION
Don't use the product or the wheelchair and contact your local distributor in case the installation has not been completed or in case of problems after installation.

 CAUTION
All elements of the system should be fitted in a stable and proper way, avoiding damage of any part, cables or sensors. The head array needs to be solid for use. Contact your local distributor in case of doubt.

Compatibility

CoMoveIT Drive works with PG Drives Technology R-net OMNI2 (including related like Permobil Power Platform), Q-Logic 3 EX Enhanced Display, Curtis Instruments AG Display Module and Dynamic Controls LiNX IN 500.

If only 3 driving commands forward, left and right are used, the wheelchair controller shall be configured in 3-axis proportional driving. If also reverse is used as separate command, the wheelchair controller shall be configured in proportional driving.

 CAUTION
The powered wheelchair must always be programmed for proportional driving. Selection between proportional and switched driving is at installation by the supplier.

 CAUTION
Programming of compatible wheelchair control systems should only be done by qualified personnel and in accordance with the specifications, requirements and safety rules defined in the installation manuals of the control system.

	CAUTION
Installation should only be done on a wheelchair of which the manufacturer allows the installation of third party devices.	

Mechanical installation

	CAUTION
During installation on the wheelchair, ensure the wheelchair is turned off.	

Mounting on wheelchair using the CoMoveIT Drive rod set (order number UDI : 05430002911151):

Remark: The existing cover plate stays in place and the plate with the horizontal tube come on top of it.

	Remove the plastic cap and unscrew the 4 screws of the cover plate at the back of the Drive head array. <table border="1" data-bbox="699 840 1426 945"> <tr> <td data-bbox="699 840 774 896"></td><td data-bbox="774 840 1426 896">CAUTION</td></tr> <tr> <td colspan="2" data-bbox="699 896 1426 945">Keep the plate in place as it clamps the cables.</td></tr> </table>		CAUTION	Keep the plate in place as it clamps the cables.	
	CAUTION				
Keep the plate in place as it clamps the cables.					
	Put the plate of the horizontal bar from the Drive rod set on top of the cover plate and put back the 4 screws to attach + put back the plastic cap. Note: - hold the cover plate at left and right top corner - bring the additional plate from the top, behind the 2 turning knobs - slide the plate to the bottom till it fits in the first plate and fits the holes - screw while holding all in place. <table border="1" data-bbox="699 1523 1426 1686"> <tr> <td data-bbox="699 1523 774 1579"></td><td data-bbox="774 1523 1426 1579">CAUTION</td></tr> <tr> <td colspan="2" data-bbox="699 1579 1426 1686">If the cover plate came loose, make sure not to damage the cables when mounting both plates at the back of the head array.</td></tr> </table> *remark: the plate of the Drive Rod Set will have a hole to where the		CAUTION	If the cover plate came loose, make sure not to damage the cables when mounting both plates at the back of the head array.	
	CAUTION				
If the cover plate came loose, make sure not to damage the cables when mounting both plates at the back of the head array.					
	Fit back the plastic cap after programming (see further)				

	Combine the vertical and horizontal bar of the Drive rod set.
	Attach a 16x16mm square holder, e.g. CoMoveIT's Headset Mounting Clamp, at the back of the wheelchair. The mounting clamp must be purchased separately.
	Fixate the cabling along the vertical adjuster and along the wheelchair frame. Keep them away from sharp edges. Ensure enough tolerance for extension of the vertical adjuster. The use of tie wraps is recommended every 15 to 20 centimeters

Mounting on wheelchair using the Ball joint plate Drive (order number UDI : 05430002911151)

	Carefully remove the dummy cover plate at the back of the Drive head array.
	Mount the ball joint plate Drive to the back of the head array. Carefully guide the cable in the shown routes. Fix the plate with the same 4 screws.  CAUTION Make sure not to damage the cables when mounting plate at the back of the head array.



Install the bolts for fixation of the ball joint and fix at the desired position.
Tighten firmly.



WARNING!

Keep cables away from electrically powered mechanisms that can act as pinch points.

Software Installation

Unless there is a software upgrade of the Drive available on www.comoveit.com, there is no software installation required.

The programming of the wheelchair controller is described further.

Connections



CAUTION

Handle the connectors and cables of the device elements with care.

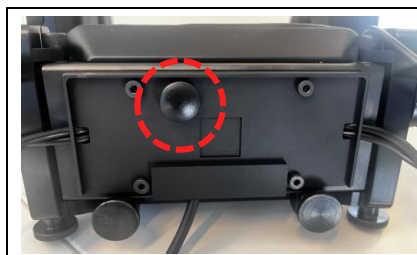
Connect the DB9 output cable with the wheelchair controller. Make sure to fix the screws of the DB9 connector to avoid error messages.

Configuration

Qualified personnel can tailor the operation to the individual needs following the installation manual.

Defining the configuration and system settings	➔ See 'Configuration: Programming instructions' (below)
Optimizing the position of the head support	➔ See 'Head array adjustments' (further)
Defining the wheelchair modes and parameters by programming the wheelchair controller.	➔ See Installation Manual and Instruction for Use of the wheelchair

Configuration: Programming instructions

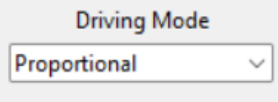


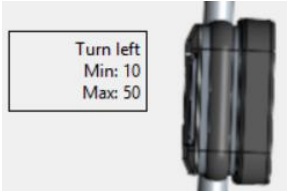
Remove the plastic cap of the backplate, using a flat screwdriver if needed.

	Connect your PC at the USB-C connection through the hole in the back plate.
	Use the CoMoveIT Drive Configurator to configure the device for the user.
	Always put the plastic cap back on the backplate after programming.

Functions of CoMoveIT Drive Configurator

Menu item	Instruction
	Click on the connect icon to connect to the device. When connected, this icon greys out and the disconnect item highlights.
	Use Read to view the current settings. Use Write to upload your selected settings.
	You can open or save this file to your PC.
	'About' will show the version of this program.

Setting	Description, select as desired
	• Proportional control transfers increasing pressure to increasing driving speed. • Switched control operates at a defined, fixed driving speed.

Tilt compensation high	• Tilt Compensation: This setting will increase the required pressure on the back pad, depending on the inclination of the wheelchair / head control. You will use this setting to avoid that the wheelchair is activated simply by the weight of the head when the wheelchair is inclined. The more it is inclined the higher the required pressure will be set. • None = no compensation, also in inclined state the pressure remains as in normal state • Low = low compensation (typically used for children, low weight of the head) • Medium = medium compensation • High = high compensation (typically used for adults, high weight of the head).
Audio signals Off	• Select ON or OFF • The volume cannot be adjusted. • Audible feedback does not affect device functionality. ◦ A single beep will be heard if a sensor is pressed when the device is in Relax mode
For each sensor: 	• Function: • Select the desired function for this sensor: forward, reverse, left, right, user switch (to go into the menu of the wheelchair controller) or relax (to set the wheelchair in sleeping mode). • Min & Max define the sensitivity of the sensor. • “Min” shows the threshold from where the function will be activated; • “Max” shows the threshold below which the function will be activated. • The values can be 1-99, • 1 indicates the lowest possible activation force (highest sensitivity), • 99 indicates the highest possible activation force. • Only force applied between the low and high value, will activate the function.

Determining the value for the sensor threshold	• Set the Min value to a level that allows comfortable activation but avoids unintended activation by rest position for instance. Practically, increase the Low value until you find the rest point for that sensor position. If the activation seems to be reached too easily, the low value needs to be increased for that sensor input. • When in proportional control: Set the high value to define the highest force level that a user has to apply to achieve the full proportional speed range. Practically, bring the high value down step by step, still allowing the user to drive the highest speed in a comfortable way. • Set the high value to define a safety level at excessive pressure: any pressure to a certain extent higher than the set high value on the forward and reverse driving function will stop of the wheelchair movement. • In case the applied force doesn't activate the wheelchair, decrease the low value unit the lowest force is found, increase the highest value so the overpressure safety stop is not activated all the time.
How does it work?	• Applying a sensor pressure between the set low and high value will lead to activation of the function of that input. • In proportional driving type, the force applied just above "low" will lead to lowest speed, while a force applied just below "high" will lead to the highest speed. • Excessive pressure, for instance by hyperextension, on forward or reverse driving will stop the wheelchair.

Practical example

Programmed as 3-Axis Proportional driving

- Driving type in CoMoveIT Drive = Proportional
- Backpad used for command Forward: sensitivity low = 35
- Left rear side pad used for command Left : sensitivity low = 5
- Right rear side pad used for command Right : sensitivity low = 5
- Left frontal side pad used for command User Switch, sensitivity low = 25
- Right frontal side pad used for command Relax, sensitivity low = 25

In this example,

- The rest point of the back head is just below 35. In order not to activate the forward command too easily (allowing to rest the head), the value could be set higher.
- Side pads for turning left and right are set much more sensitive to minimize the required force .
- In order not to activate the user switch and the relax mode by a too soft touch, the low value is set to 25.
- These values are indicative only and need to be determined per user.

Operation



WARNING!

Do not use the device under rain.



WARNING!

Do not attempt to operate a powered wheelchair with the CoMoveIT Drive without the assistance, training and permission from a qualified healthcare professional.



WARNING!

The wheelchair must be fitted with an emergency stop function that is within the reach of the attendant.



WARNING!

The attendant or healthcare professional is expected to interpret the abilities of the user in terms of speed, any of the functionalities, cognitive and mental ability to use a powered wheelchair, in particular the safety mechanisms such as on/off button or an emergency button.



WARNING!

CoMoveIT Drive is not appropriate to use during car transportation of the powered wheelchair.



WARNING!

Do not cover the head array



CAUTION

CoMoveIT Drive is designed for both indoors and outdoors use. For use indoors, normal care should be observed. Outdoors you must remember to move very slowly on steep inclined terrain and be extremely careful when moving over uneven surfaces. Consult the wheelchair's instruction manual for more information on the wheelchair's driving rules.

Using the CoMoveIT

Before using CoMoveIT Drive for the first time, it is advised that the provider assists and explains the different possibilities and options to the user and/or the attendant. If you are unsure how to use your CoMoveIT Drive to control your powered wheelchair, it is advisable to consult CoMoveIT.

It is important that the user and the attendant are fully aware of how to use the system and the possible adjustments to optimize the use experience.

It is recommended, prior to using a CoMoveIT Drive in public places, crowded places, or in tight driving situations, that the users try it out several times in an open space area that is familiar to them, so that they become comfortable with how your CoMoveIT Drive operates. Please inspect the device following the Maintenance section.



WARNING!

Turn off the wheelchair prior to entering or exiting the wheelchair.

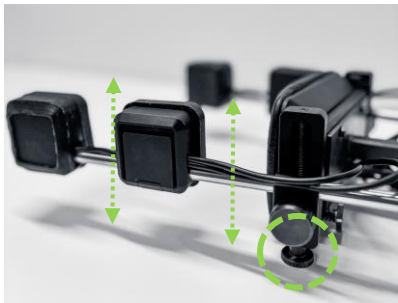
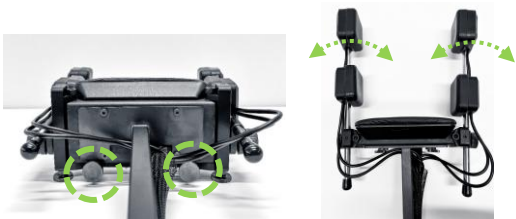
Basic functionality for the driver:

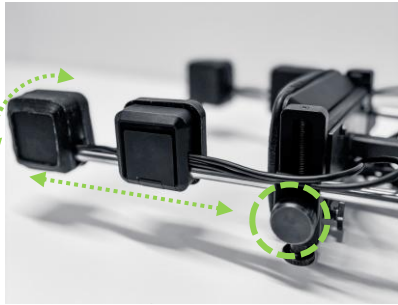
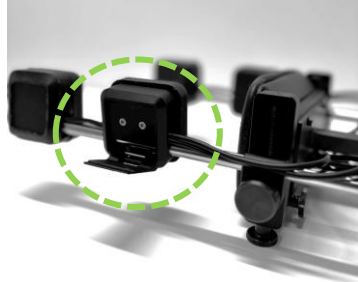
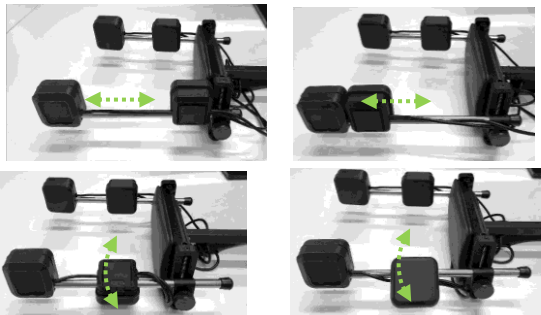
Some of the below mentioned functions might not be possible for all wheelchair users. The feasible configuration is determined together with qualified personnel.

Driving the wheelchair	Apply pressure on the sensors on the head array, which have been given driving functions, to drive forward and backward and
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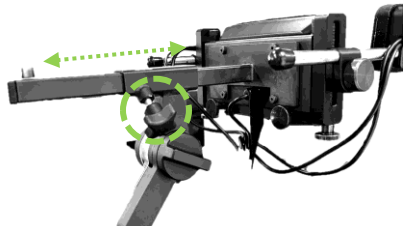
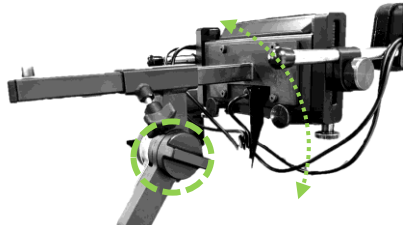
	to turn the wheelchair left and right. Combine forward/reverse with turning to veer. • Release any pressure from these sensors to stop wheelchair movement. • Operational forces can range between 50 gr and 15kg, depending on the sensitivity settings installed.  CAUTION When the wheelchair is programmed for latched driving, it may be necessary to activate a reset switch. Contact your provider for more details.
Speed control	• When the driving type is “Proportional”: press harder to drive faster • When the driving type is “Switched”, the wheelchair drives at a predefined speed.
Putting the wheelchair to sleep mode	• Press the <i>Relax</i> sensor. All sensors except this one will not respond until you exit the relax mode by pressing the <i>Relax</i> sensor
Use wheelchair operating modes like Seating adjustment	• Press the <i>User Switch</i> sensor to access the wheelchair controller modes. Navigate to e.g. seating with the <i>Forward</i> sensor and select with the <i>Right</i> sensor • Functions are typically Seating, Bluetooth device control, and infrared device control, as programmed by your provider.

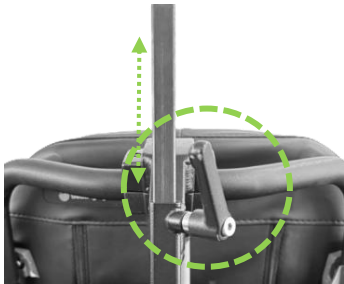
Head array adjustments

	Use the rotary knobs at bottom side to change the height of the side pads.
	Use the rotary knobs at the back to change the opening angle of the side pad bar.

	Use the rotary knob at the side to rotate the bar around its axis or to slide it more to the front or to the back.  CAUTION Do not try to rotate the bar when the rotary knob is tightened. This might damage your device.
 	Open the lever to rotate the rearmost side pad or to slide it along the lateral bar.  CAUTION Do not force any adjustment of the rearmost side pad when the lever is locked. This might damage your device.

When using the CoMoveIT Drive rod set (part nr. 5430002911151) following adjustments are possible:

	Use the rotary knob or lever to move the head array more to the front or to the back
	Use the rotary knob to change inclination  CAUTION Do not overtighten the rotary knob to avoid damage.

	Use the lever to change the height of the head array.
---	--

	CAUTION
Forcing any of the adjustment mechanisms to move other than as described above might damage the locking mechanisms.	

	CAUTION
Ensure that all adjustment mechanisms are locked before use.	

Wheelchair Controller programming



WARNING!

Programming should only be conducted by qualified professionals with in-depth knowledge of programming the wheelchair controller parameters. Incorrect programming could result in an unsafe set-up for you and your device.



WARNING!

Programming should only be done in accordance with the safety rules, safety instructions, instructions for use and installation manuals from the wheelchair controller device. Incorrect programming could result in an unsafe set-up for you and your device.

R-net configuration



Set the following parameters in the R-net programmer and write them to the controller of your powered wheelchair.

- **Profile Management** > Create driving Profiles for CoMoveIT Flex. Recommended to program one for indoor driving, one for outdoor driving and one with in between speed settings.
- **Profile Management** > **Input Device Type**: set this parameter to **Omni**.

Profile Management	Profile 1	Profile 2	Profile 3
Profile Name	CoMoveIT IN	CoMoveIT M	CoMoveIT OUT
Profile Enable	Yes	Yes	Yes
Mode Enable	[12345678]	[12345678]	[12345678]
Input Device Type	Omni	Omni	Omni
Input Device Subtype	All	All	All
Seat Reversal Profile	No	No	No
Allow Grab	Yes	Yes	Yes

- **Omni** > **Global** > **Sleep 12V** > **On**

Note: Activating Sleep 12V is mandatory when the Relax function of CoMoveIT FLEX is used.

OEM Factory	
Omni	
Global	
Sip and Puff	
External On/Off Switch Detect	Off
Scan Speed	1.0 s
Scan Freeze in Mode	[]
Sleep 12V	On

- **Omni** > **Port**: select the Omni port in which CoMoveIT Drive is connected.
- **Omni** > **Ports** > **SID**: Set SID parameter to Proportional:
 - If only 3 driving commands forward, left and right are used, the wheelchair controller shall be configured in 3-axis proportional driving. Reverse driving is then possible by using a short press on the user switch to change direction or by programming the Auto Toggle. If also

reverse is used as separate command, the wheelchair controller shall be configured in proportional control.

- **Omni > Ports > Switches:** Set **Switch Detect**, **9-Way Detect**, **User Switch Detect** and **9-Way SID Switch Detect** to **Off**.

Omni	Global			
	Profiled			
Ports	Port			
	SID			
Switches	Switch			
	Switch Detect			
	9-Way Detect			
	Switch Long			
	Switch Medium			
	Switch Debounce			
	Double Click			
	User Switch Detect			
	9-Way SID Switch Detect			

CoMoveIT	IN	CoMoveIT	M	CoMoveIT	OUT
1		1		1	
Port 1		Port 2			
Proportional		Proportional			
Port 1		Port 2			
Normally Open		Normally Open			
Off		Off			
Off		Off			
4.00 s		1.00 s			
1.50 s		1.00 s			
50 ms		50 ms			
0.0 s		0.3 s			
Off		Off			
Off		Off			

- **Omni > Ports > Controls:** Set **Fwd /Rev Auto Toggle** to **Off**.

Controls	User Control		
	Return To		
	Timeout to Menu		
	Menu Navigation		
	Menu Scan Rate		
	Auto-repeat		
	Fwd / Rev Auto Toggle		
	Auto Toggle Time		
	Axis Direction Toggle Time		
	Actuator Selection		
	Actuator Axes		

Port 1	Port 2
Menu	Menu
Menu	Drive
0 s	0 s
Normal	Normal
0.00 s	0.00 s
Off	Off
Off	Off
3.00 s	2.00 s
0.25 s	0.25 s
SID	SID
Normal	Normal

- **In case of a 3 sensor configuration, to use Auto toggle to switch direction:**
Omni > Ports > Controls: Set **Fwd /Rev Auto Toggle** to **On**

- Press and release FWD/REV within “Auto Toggle Time” will change driving direction.
- Activate again within “Auto Toggle Time” will initiate driving.
- No action within “Auto Toggle Time” reverts to original driving direction

For installations with OMNI2 controller:

If an error code appears on the Omni2 display, please consult the following Table. Errors appear as text displayed on the OMNI 2 display as text messages accompanied by an ID code. Do not try to solve this problem yourself, please ask for support from your local distributor.

R-net Error Codes

Error ID	Error Name	Text Displayed on OMNI	Remedy #
0704	12V Supply Failure		1
0808	Joystick Error	Omni Input Joystick Error	2
080A	Joystick Error	Joystick Error	3
080B	Joystick Error	Joystick Error	3
0905	SID Detached	SID Disconnected	3
09B1 or 09D1	Omni Input	Omni Input SID Detached Error	4
09D0-D2 or 09C0-C2	SID Fault	Omni Input SID Error	5
0E00	Joystick Error	Joystick Error	3
0E02	Joystick Error	Joystick Error	3
1E07	User Switch Detached	Switch Error	6
1E40 or 1E42	Omni Input	User Switch Error	7
1E54 or 1E64	Omni Input	Omni Input Module Error	8
2F01	Center Joystick	Center Joystick	3
8146	Omni Input	Omni Input Module Error	9

Remedy 1

Perform the following steps:

- Check the condition and charge level of the batteries.
- Ensure the connections between the batteries and power module are tight and the cables are not damaged.
- Ensure the connections between the motors and power module are tight and the cables are not damaged.
- Remove and restore power to the Drive System by turning the Circuit Breaker off/on or by disconnecting the Main Fuse from the batteries and reconnecting it.

Remedy 2

The most common cause of this error is if CoMoveIT Drive is disconnected from Omni2.

- Check the DB9 cable between the Omni and CoMoveIT Drive.
- If the error persists, in the Rnet programmer go to: **Omni > Ports > SID**: Set SID parameter right (**Proportional, or 3-Axis Proportional**).

Remedy 3

The most common cause of this error is if the joystick is deflected away from center, or a sensor of CoMoveIT Drive is pressed before or during the time the control System is switched on. The joystick displaced screen will be displayed for 5 seconds, if the pressure from a sensor of CoMoveIT Drive is not released within that time, then an error is registered.

- Ensure that any sensor of CoMoveIT Drive is not pressed before or during the time you power on the wheelchair. Power cycle your wheelchair.
- If the error persists, in the Rnet programmer go to: **Omni > Ports > SID:** Set SID parameter right (**Proportional or 3-Axis Proportional**).

Remedy 4

- Check the DB9 cable between the Omni and CoMoveIT Drive.
- If the error persists, in the R-net programmer go to: **Omni > Ports > Switches:** Set **9-Way Detect** to **Off**.
- If there is switch connected to OMNI 2 and e-stop message is displayed on the Omni2 display during power up, in the R-net programmer go to: **Omni > Switches:** Set **User Switch** to **Normally Open** or **Normally Closed**, based on the type of switch you are using.

Remedy 5

- Power cycle your powered wheelchair (Turn your powered wheelchair off and on).
- Check the cable between the Omni and CoMoveIT Drive.
- If the error persists, reconnect the cable or replace the cable.

Remedy 6

The Omni has detected that the User Switch has become disconnected from the U1 or U2 port of the Omni.

- Check all cables and connectors between the Omni ports and the User Switch. If the trip is still present after the above checks have been made, then the User Switch may be defective. Try replacing it with a known good switch.
- If it is required to use the Omni without a User Switch being connected, in the R-net programmer go to: **Omni > Switches:** Set **Switch Detect** to **Off**.
- Plug a switch in the Omni U port or set **Switch Detect** to **Off** in the R-net Programmer.

Remedy 7

- In the R-net programmer go to: **Omni > Switches >:** Set **User Switch Detect** to **Off**.

Remedy 8

- In the R-net programmer go to: **Omni > Switches >:** Set **9-Way SID Switch Detect** to **Off**.

Remedy 9

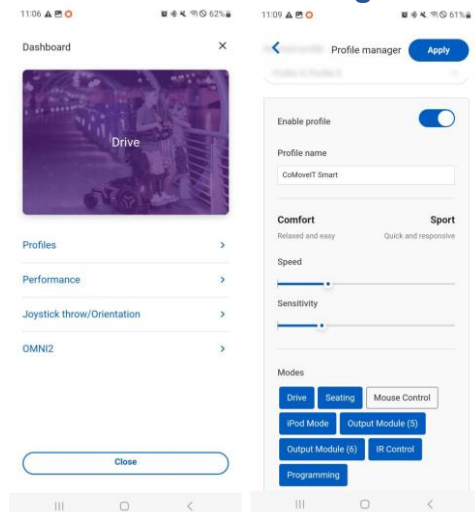
- Check the cable between the Omni and CoMoveIT Drive.
- Reconnect the cable or replace the cable.

Permobil Power Platform Configuration

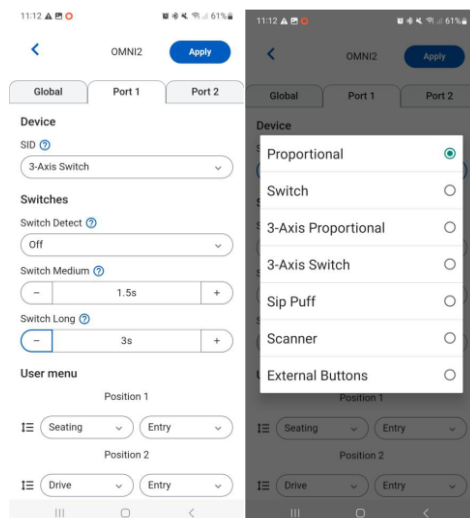
Set the following parameters in the programmer and write them to the controller of your powered wheelchair.



- **Profiles > Profile Manager > Create driving Profiles for CoMoveIT Drive**

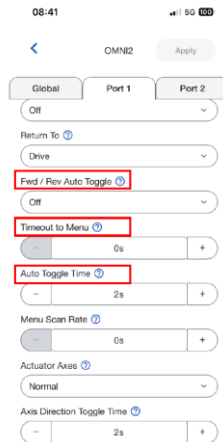


- **Omni2 > Sleep 12V 'On'**
- **Omni2 > Select Port > select SID type**



- If only 3 driving commands forward, left and right are used, the wheelchair controller shall be configured in 3-axis proportional driving. If also reverse is used as separate command, the wheelchair controller shall be configured in proportional control.
- **Omni2 > Select Port > select Switch Detect 'Off'**
- **Press 'Apply'**
- **Omni2 > Advanced configuration**
 - Switch Detect 'Off'
 - 9-way Detect 'Off'
 - 9way SID Switch Detect 'Off'
 - User Switch Detect 'Off'
- **Press 'Apply'**

- **Omni2 > Select Port > Fwd /Rev Auto Toggle** : set to 'Off'
- **Omni2 > Select Port > Time Out to Menu**
 - Sets the period of SID inactivity before the User Menu will appear
 - 0s to 60s in steps of 1s (0s = time out inactive)



08:41 5G

OMNI2 Apply

Global Port 1 Port 2

Off

Return To Drive

Fwd / Rev Auto Toggle

Off

Timeout to Menu 0s

Auto Toggle Time 2s

Menu Scan Rate 0s

Actuator Axes Normal

Axis Direction Toggle Time 2s

- **In case of a 3 sensor configuration:**
 - **Omni2 > Select Port > Fwd /Rev Auto Toggle** : set to **ON**
 - Press and release FWD/REV within “Auto Toggle Time” will change driving direction.
 - Activate again within “Auto Toggle Time” will initiate driving.
 - No action within “Auto Toggle Time” reverts to original driving direction
 - **Omni 2 > Select Port > Auto Toggle Time**
 - Sets the time for drive direction change in FWD/REV Auto Toggle
 - 0.25s to 5s in steps of 0.25s

Dynamic controls configuration (LiNX IN500-A)



Set the following parameters in the programmer and write them to the controller of your powered wheelchair.

- Connect: Open the **LiNX Access** tool and connect to the wheelchair system.
- Navigate: Go to **Modules** → **IN500**.
- Select **User Input Configuration**.
- Select the input type Proportional Head Array.
- Set **Neutral Window** → **20%**.
- Set **Joystick Throw** → **100%**.
- Set **User Input – Joystick Shaping** → **All 100%**.

Modules	IN 500
Power Module	USER INPUT - CONFIGURATION User Input Configuration Proportional Head Array
REM 2xx	Neutral Window 20 %
REM 4xx	Joystick Throw 100 %
REM 5xx	Joystick Switch Threshold 40 %
CR 4xx	Tremor Dampening 0 %
ACU 2xx	Joystick Rotation Angle 0 °
TPI	Swap Joystick Axis No swap
IN 200	USER INPUT - JOYSTICK SHAPING Forward 100 % Reverse 100 %
IN 500	Left 100 % Right 100 %
OUT 500-1	

- Select **Input Pin 6 – Port Settings**.
- Set **Short Press – Always** → **Functions > Next**.
- Set **Long Press – Always** → **Display Actions > Enter Rest**.

IN 500

JACK SOCKET TIP - PORT SETTINGS
 Input Type Button
 Advanced ✕
 Momentary
 Short Press
 Always → Functions > Next Function
 Long Press
 On Press

JACK SOCKET RING - PORT SETTINGS
 Input Type Not Connected

INPUT PIN 5 - PORT SETTINGS
 Input Type Button
 Advanced ✕
 Momentary
 Short Press
 Long Press
 On Press

INPUT PIN 6 - PORT SETTINGS
 Input Type Button
 Advanced ✕
 Momentary
 Short Press
 Always → Functions > Next Function
 Long Press
 Always → Display Actions > Enter Rest

- Save: Click **Write to chair**.

- **In case of a 3 sensor configuration:**

- Navigate: Go to **Drive Function**.
- Select **Operation**.
- Set **Quadrant Operation** → **3Q – Manual Toggle**.
- Set **Reverse Quadrant Operation** → **Ignored**.

Functions	Flex IN
● FLEX IN	REVERSE DECELERATION
	Reverse Deceleration
	80 %
Flex IN	TURN
Seating Tilt	Turn Boost at Max Speed
	200 %
Seating Recline	Max Turn Speed
	35 %
Seating Elevate	Min Turn Speed
	20 %
Mouse Mover	Turn Acceleration
	50 %
Switch Control	Turn Deceleration
	75 %
Utility	Soft Start Turn
	0.10 s
	Soft Finish Turn
	30 %
	STABILITY
	Turn Transition
	100 %
● REM400/500 D	LATCHED DRIVING
D1	Latch Driving
	Off
D2	Latch Driving in Reverse
	Off
D3	Latch Drive Timeout
	300.0 s
	Latch Driving Demand Ramp-Down Rate
	100 %
● REM400/500 S	PERFORMANCE
S1	Power
	100 %
S2	Gyro Enabled Drive Function
	On
S3	OPERATION
	Quadrant Operation
	3Q - Manual Toggle
S4	Forward Quadrant Operation
	Forward
S5	Reverse Quadrant Operation
	Ignored
	Left Quadrant Operation
	Left
	Right Quadrant Operation
	Right

- Navigate: Go to **Modules** → **IN500**.
- Select **Input Pin 6 – Port Settings**.
- Set **Short Press** – Always → **Drive > Toggle Reverse**.
- Set **Long Press** – Always → **Functions > Next Function**.

Modules	IN 500
Power Module	Advanced
REM 2xx	Momentary
REM 4xx	Short Press
	Active Function is > Mouse Mover > Connectivity > Mouse Left Click > Single
REM 5xx	Long Press
CR 4xx	On Press
ACU 2xx	JACK SOCKET RING - PORT SETTINGS
TPH	Input Type
	Not Connected
IN 200	INPUT PIN 5 - PORT SETTINGS
	Input Type
	Button
IN 500	Advanced
OUT 500-1	Momentary
GYR	Short Press
ACT 4xx	Long Press
IDC	On Press
	INPUT PIN 6 - PORT SETTINGS
	Input Type
	Advanced
	Momentary
	Short Press
	Always > Drive > Toggle Reverse
	Long Press
	Always > Functions > Next Function
	On Press

- Short press on the User Switch of CoMoveIT > Selects Forward/Reverse.
- Long press on the User Switch of CoMoveIT > Selects Next Function.



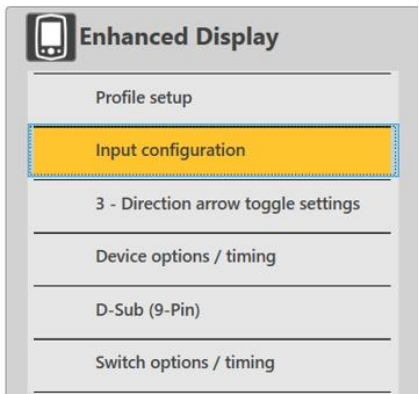
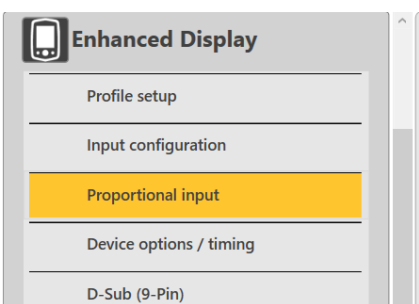
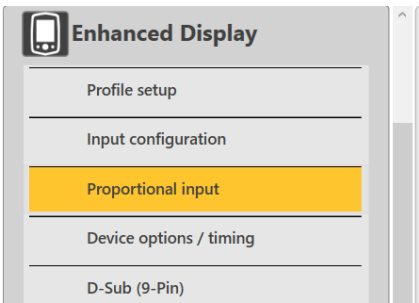
CAUTION

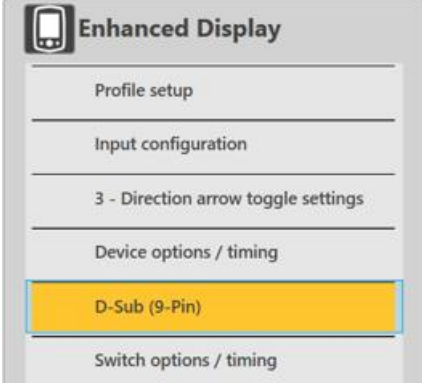
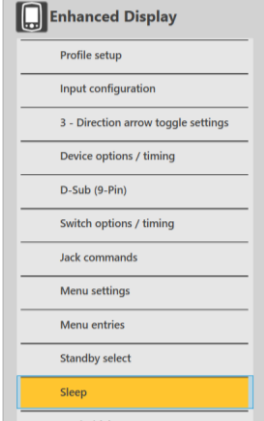
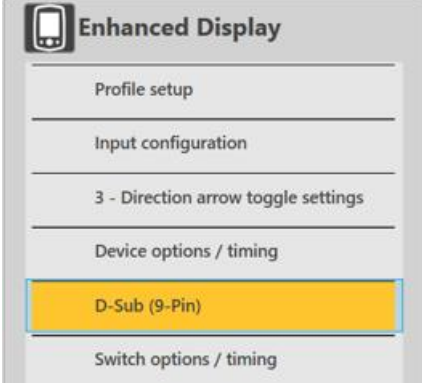
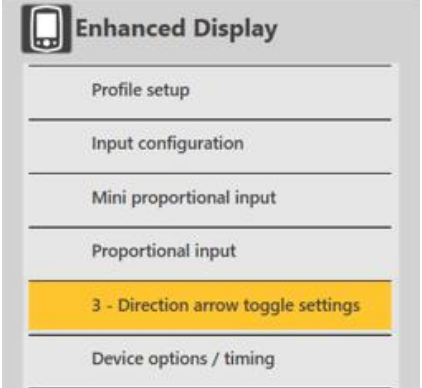
In 3-sensor configuration: Rest is not displayed in the wheelchair when CoMoveIT is in Relax mode.

Curtis Instruments configuration (Enhanced Display / SCIM)



Open ECON-W software and set the following parameters.

	Enhanced Display > Input Configuration > • Proportional • 3-Direction Proportional If only 3 driving commands forward, left and right are used, the wheelchair controller shall be configured in 3-direction proportional. If also reverse is used as separate command, the wheelchair controller shall be configured in proportional.
	Enhanced Display > Proportional Input > • Center Deadband > 20% • Auto center adjust > Disabled
	Enhanced Display > Proportional Input > • Proportional calibration > Start Important! Before running the proportional calibration, set CoMoveIT Drive driving mode in SWITCHED Driving using the configurator program (see section 'Configuration: programming instructions'). • After successful calibration > save new values

	Enhanced Display > D-Sub (9-Pin) > • D-Sub supervision > Enabled • Mode short command type > Mode • Mode long command type > Sleep • Mode long command type must be higher than 1500 ms
	Enhanced Display > Sleep > • Sleep power mode > Enabled • Wake up > Mode switch
	If 3-direction proportional is required: Enhanced Display > D-Sub (9-Pin) > • D-Sub supervision > Enabled • Mode short command type > Toggle • Mode long command type > Mode
	If 3-direction proportional head is required: Enhanced Display > 3 – Direction arrow toggle settings > • Toggle in drive > Disabled • Toggle while driving > Disabled • Toggle in seat > Disabled

Test before use

After installation of CoMoveIT Drive, execute the following tests before the wheelchair is used.

Inspect intactness

Check whether:

- All parts of CoMoveIT Drive are not damaged.
- The headrest can move up and down in its whole range.
- All head array mechanism are operational.
- Cabling is fixated away from pinch points and sharp objects.



WARNING!

Electrically powered mechanisms of the wheelchair can act as pinch points for your device.

Operational test

- 1) Switch on the wheelchair.
- 2) Press each of the sensor pads until you hear the parking brake disengage.
- 3) Release the sensor pad, and hear the parking brake engage.
- 4) Repeat steps 3 and 4 a few times, for each of the sensor with a driving function.
- 5) Check functionality of the sensors used as User switch and Relax mode.

Drive test

- Drive the wheelchair in all directions using CoMoveIT Drive and observe if there is any abnormal behavior.
- Check all the functionalities of the wheelchair.
- Operate moving parts of the wheelchair (seating, footrests, etc.) and ensure cabling does not inhibit their functionality.

Maintenance



WARNING!

In case excessive wear of any of the pads, it is mandatory to contact your local authorized dealer and have the worn parts replaced.

Maintenance is important for the safety and performance of your CoMoveIT Drive.

Perform a monthly inspection to ensure that:

- All rotary knobs are in place and in good shape.
- All bolts and screws are tightened.
- All cabling and connectors are undamaged and connections are tight.

- There is no excessive wear to any parts of the device, especially the pads of the head array.

Let your supplier perform a yearly check of the wheelchair and the subsystems.

Cleaning



WARNING!

Never spill water or use a water hose to clean CoMoveIT Drive parts to avoid damage.



WARNING!

Do not clean the device while in use by the patient.



CAUTION

Do not use aggressive cleaning agents or additional lubricants.



CAUTION

Water might affect the operation of sensors. Make sure that all parts and surfaces are completely dry before use.



CAUTION

Cleaning contributes to the overall hygienic condition of your device. Failure to clean on a regular basis, might cause excessive sweat and dirt build up on the cushions .

Metal and plastic parts	Clean with a damp cloth. In case of excess dirt concentration, a soap water solution can be used. Always wipe dry after cleaning.
Head array pads	Clean weekly with a damp cloth using water or soap water. During hot weather conditions, clean them every day since sweat concentration might be increased. Gently, wipe dry after cleaning.  WARNING! In case excessive wear of any of the head pads, it is mandatory to contact your local authorized dealer and have the worn parts replaced.

Troubleshooting

If your device does not react as expected, check the following:

- Make sure the wheelchair and the wheelchair controller are powered on.
- Make sure that the cable between CoMoveIT Drive and the controller (e.g. Omni module) is connected, tightened and connected to the right programmed port.

If one of the components no longer works, contact your local distributor.

Trouble	Remedy
No wheelchair movement when pressing a sensor	• Check if the wheelchair controller profile is set for usage with CoMoveIT Drive. • Make sure the used wheelchair controller port is correctly programmed in the wheelchair controller software. • Check for damage on cable, connector or sensor pad.

	Request your supplier to decrease the 'low' sensitivity and increase the 'high' sensitivity
Functions get activated too easily	- Check for damage on sensor pad. - Request your supplier to increase both 'low' and 'high' sensitivity of the functions that are activated to easily.
Pushing to drive forward but driving backwards	- Request your supplier to check that the function for the sensor is set correctly. - Check the programming of the wheelchair controller (joystick axis, motor swap)
Pushing to the right turns left and/or vice versa	- Request your supplier to check that the function of the used sensor is set correctly - Check that the head array is mounted with the ID label on the bottom - Set the head array side bar in a higher position and tilt the side pads, or don't connect the rearmost side pads.
Glasses hinder to push the side pads	Use the bottom rotary knob to position the side pads higher.
Side pads are loose on the bar	- Check that all adjustment clamps and rotary knobs are tightened. - If the pads remain loose, contact your local distributor for assistance.
Hearing beeps while pushing	- When you're in Relax (sleeping) mode, beeps will be heard when pushing sensors. - When you are not in Relax mode, contact your supplier to check the condition of product.
Error codes are shown on the wheelchair controller	- Ensure that any sensor is not pressed before or during the time you power on the wheelchair. Power cycle your wheelchair. - If the error persists, contact your local distributor for assistance.
Side pad is lever is loose even when the lever is closed	- Ensure that the little screws under the lever of the sensing pad are in place. - Follow the instruction in Service, sensing pad with lever step 9 to tighten them appropriately.  WARNING If the tiny screws are too tight, the side pad block might break during the operation of the lever. Always tighten these screw by turning then ¼ of a full turn each time.

Removal

	CAUTION
It is recommended that the removal of the product is done by qualified personnel and according to the Installation manual which can be downloaded from www.comoveit.com	

Removal steps:

- Switched the wheelchair off.

- Remove tie wraps and disconnect all cables.
- Remove the head array

Service



WARNING!

Before any service procedure do the following:

- Switch off the wheelchair.
- Disconnect the part that needs service.

The device can not be serviced while in use with a patient.



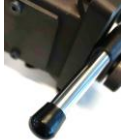
WARNING!

Disconnect the DB9 connection of CoMoveIT Drive from the wheelchair controller or dismount the CoMoveIT Drive headset, when servicing the wheelchair batteries.

Back head rotary knobs

	1. Locate the missing or to be replaced rotary knob.
	2. Take one rotary knob.
	3. Place one nylon washer on the rotary knob.
	4. Place the spring on the rotary knob on the top of the nylon washer.
	5. Place one nylon washer on the top of the spring.
	6. Screw the rotary knob to the head array. Note: Ensure that the nylon washers and spring are in place before screwing to the head array.

End stoppers

	1. Locate the damaged or missing end stopper.
	2. Remove the damaged end stopper. • Use a set of pliers and pull firmly.
	3. Insert and press the new end stopper to the shaft.

Circumferential cushion

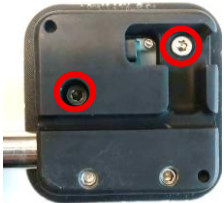
	1. Remove the circumferential cushion by pulling it.
	2. Disconnect the jack connector.
	3. Losen the two screws.
	4. Remove the sensing pad from the shaft.
	5. Remove the old circumferential cushion from the shaft.

	6. Insert the shaft and jack connector through the slot of the new circumferential cushion.
	7. Place the sensing pad to the shaft.
	8. Connect the jack connector.
	9. Tighten the two screws. Note: The shaft must be fixated 2mm deeper than the edge of the side pad body.
	10. Attach the new circumferential cushion to the sensing pad.

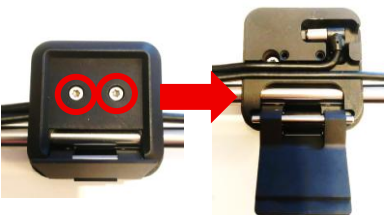


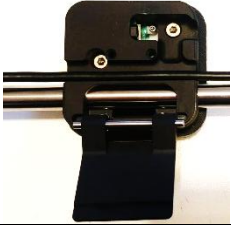
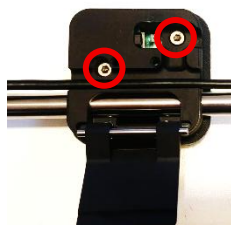
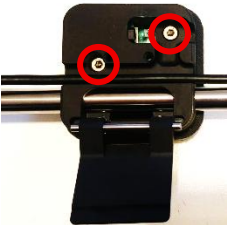
Fixed sensor pad cushion

	1. Remove the circumferential cushion by pulling it.
	2. Disconnect the jack connector.
	3. Remove the two screws.

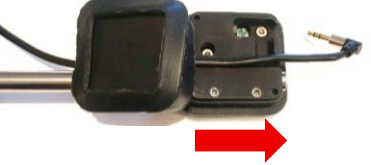
	4. The sensor plate is separated from the sensing pad block.
	5. Remove the old cushion from the sensor plate.
	6. Attach the new cushion to the sensor plate. Note: The narrow side of the cushion must be above the PCB.
	7. Attach the sensor plate to the block of the sensing pad using the two screws.
	8. Connect the jack connector.
	9. Attach the new circumferential cushion to the sensing pad.

Lever sensor pad cushion

	1. Open the lever.
	2. a) Remove the two screws. b) Remove the cover.

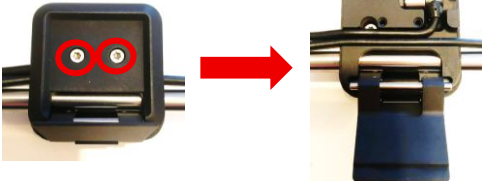
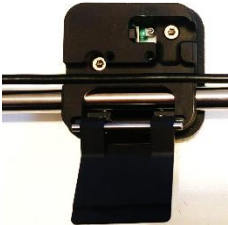
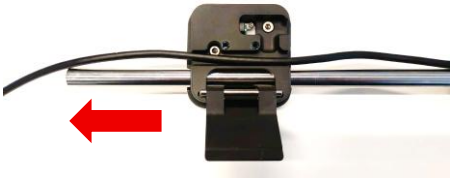
	3. Unplug the jack connector.
	4. Remove the two screws.
	5. The sensor plate is separated from the sensing pad block.
	6. Remove the old cushion from the sensor plate.
	7. Attach the new cushion to the sensor plate. Note: The narrow side of the cushion must be above the PCB.
	8. Attach the sensor plate to the block of the sensing pad using the two screws.
	9. Plug the jack connector.
	10. Attach the cover using 2 screws.

Sensing pad fixed

	1. Remove the circumferential cushion by pulling it.
	2. Disconnect the jack connector.
	3. Losen the two screws.
	4. Remove the sensing pad from the shaft.
	5. Remove the old side pad from the shaft.
	6. Place the new side pad to the shaft.
	7. Connect the jack connector.
	8. Tighten the two screws. Note: The shaft must be fixated 2mm deeper than the edge of the side pad body. 

	9. Attach the new circumferential cushion to the sensing pad.
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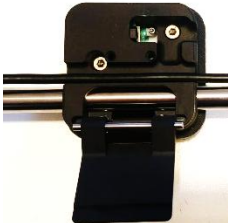
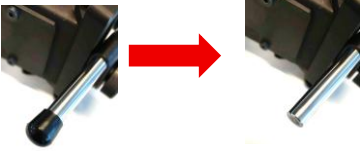
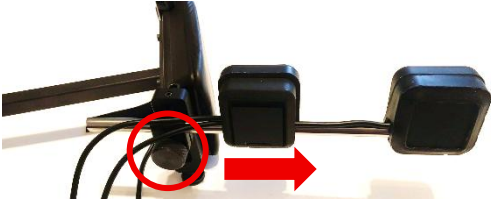
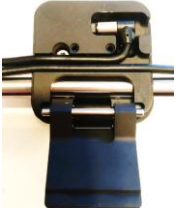
Sensing pad with lever ("Lever sensing pad")

	1. Remove the end stopper.
	2. Loosen the side rotary knob.
	3. Remove the full side pad from the head array.
	4. Open the lever.
	5. a) Remove the two screws. b) Remove the cover.
	6. Unplug the jack connector.
	7. Slide the old lever side pad out of the shaft.

	8. Slide the new lever side pad in of the shaft.
	9. a) Locate the two tiny screws. b) Remove the tiny screws. c) Place the two tiny screws back by turning them maximum 4 turns.  WARNING If the tiny screws are too tight, the side pad block might break during the operation of the lever.
	10. Plug the jack connector.
	11. Attach the cover using 2 screws.
	12. Place the full side pad to the head array and tighten the side rotary knob.
	13. Place the end stopper.

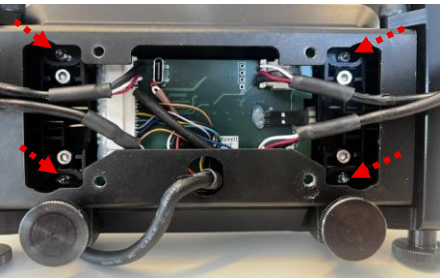
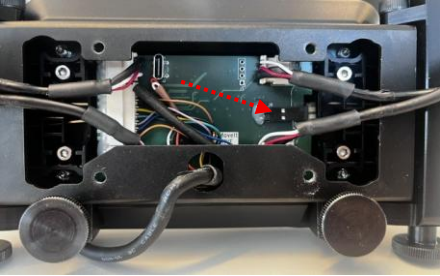
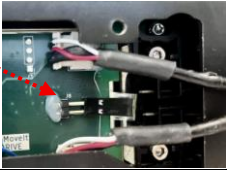
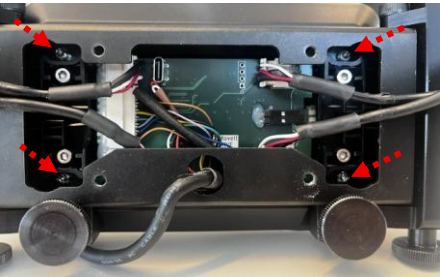
Full side pad

The process of replacing the full side pads requires to disconnect the cable of the fixed sensing pad and of the lever sensing pad.	
	1. To remove the cable of the fixed sensing pad, follow steps 1-2 of the sensing pad fixed removal.

	2. To remove the cable of the lever sensing pad, follow steps 4-6 of the lever sensing pad removal.
	3. Remove the end stopper.
	4. Loosen the side rotary knob and slide out the old side pad
	5. Place the new full side pad to the head array and tighten the side rotary knob.
	6. Place the end stopper.
	7. To connect the cable of the fixed sensing pad, follow step 7 of the sensing pad fixed removal.
	8. To connect the cable of the lever sensing pad, follow steps 4-6 of the lever sensing pad removal.

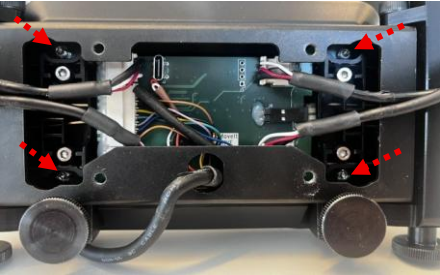
Back head pad

	1. Remove the 4 screws to remove the back cover plate.
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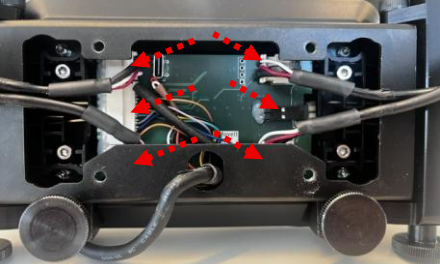
	2. Remove the 4 screws which are inside the metal frame. The back frame will be released while screws are not entirely out.
 	3. Unplug the sensor connector from the PCB. To do so, push the PCB a bit towards you to carefully slide the connector out (to the right) in front of the plastic part.
	4. Take a new back head pad and position it to the back frame. Fit the sensor cable through the gap and connect on the PCB. To do so, push the PCB a bit towards you to carefully slide the connector in (to the left) in front of the plastic part, on the two pins.
	5. Mount back the back head pad together with the PCB and mount back the back plate. (reverse the above steps)

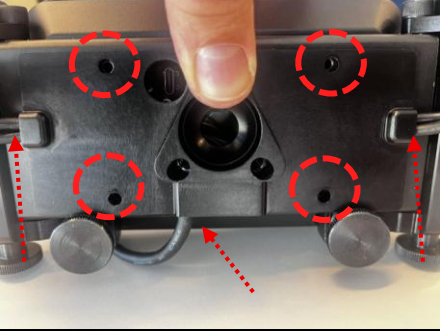
Back head pad cushion

	1. Follow the back head pad replacement steps 1-3 (above)
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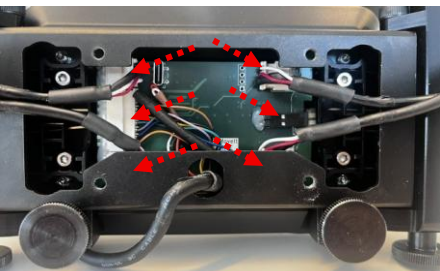
	2. Remove the old cushion from the back pad.
	3. Take a new cushion and attach around the back head pad. Note: The cushion has a rubber band around it that keeps it in place.
	4. Mount back the back head pad together with the PCB and mount back the back plate. (reverse the back head pad replacement steps 1-3)

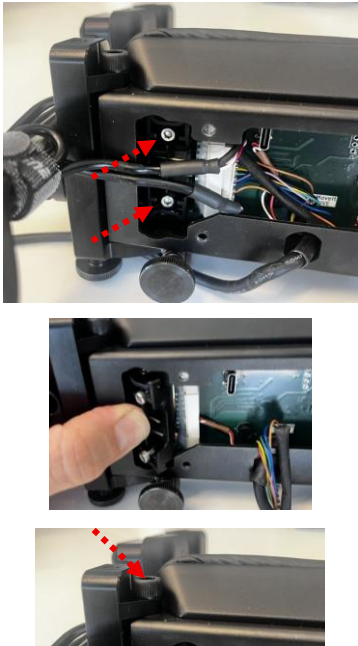
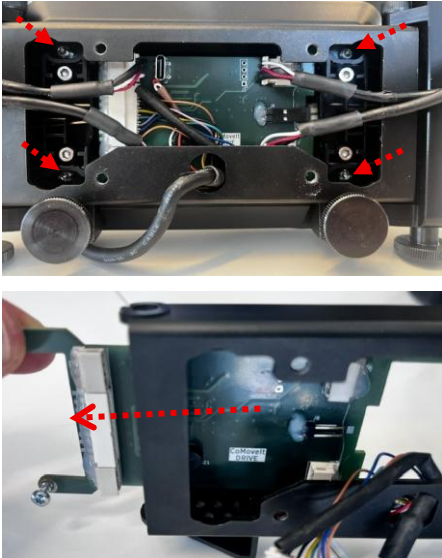
Sensor cable replacement

	1. To remove the cables of the fixed sensing pads, follow steps 1-2 of the sensing pad fixed removal.
	2. To remove the cables of the lever sensing pads, follow steps 4-6 of the lever sensing pad removal.
	3. Remove the 4 screws to remove the back cover plate.
	4. Carefully disconnect the plug of the cable to be replaced, and replace by a new cable. For the back pad, refer to the back head pad replacement procedure. For the side pads, refer to the side pad replacement procedures.

	5. Mount back the cover plate while putting the cables in the foreseen cable guides at the side and the bottom of the cover plate. Fix the plate with the 4 screws.
	6. To connect the cables of the fixed sensing pads, follow step 7 of the sensing pad fixed removal.
	7. To connect the cables of the lever sensing pads, follow steps 4-6 of the lever sensing pad removal.

Back head PCB

	1. If still possible, power on the wheelchair and connect your PC with the USB-C on the PCB, read and store the settings with the Drive configurator software (use File Read and Save to store on your PC)
	2. Power off the wheelchair
	3. Remove the 4 screws to remove the back cover plate.
	4. Disconnect all cable plugs
	5. Remove the side bar at one side (see above for related instructions)

	6. Release the hinge on that side: unscrew the bolts in the plastic piece (hold the piece with one finger) + unscrew the bolt at the top of the head pad and take it out entirely. The springs will come loose. Make sure not to loose them.
	7. Remove the PCB by unscrewing the 4 screws as shown. Slide the PCB out at the open side.
	8. Replace by a new PCB and reverse all steps above:
	9. Reinstall the hinge holding the springs in place 10. Bring in the vertical bolt though the springs 11. Attach the plastic part pushing the springs to the frame 12. Reconnect the cables (before PCB is fixed to assure back pad sensor can pass) 13. Fix the PCB and the back pad with the 4 screws 14. Reinstall the side bar
	15. Mount the cover plate
	16. Carefully power up the wheelchair to test the device



17. Restore the saved settings with the Drive configurator software (use File Open and Write)



WARNING!

After any service procedure, follow the “Test before use” instructions of this document.

Technical specifications

SPECIFICATIONS	
System Name	CoMoveIT Drive
Interface Connection	DB9 RS232 Serial Cable – cable fixed to the device
Interfaces	PG Drives Technology R-net OMNI 2, PG Drives Technology R-net Input/Output Module, Q-Logic 3 EX Enhanced Display, Curtis Instruments AG Display Module, LINX IN 500
Operating Forces	50 gr~15 kg (depending on the sensitivity settings)
Operating Voltage	12V DC
Maximum Current Usage	Driving mode: 50 mA
SID Control Type	Proportional, 3-Axis Proportional. Switched driving selectable using the Drive Configurator software
Head Force Sensor Connection	3,5 mm stereo jack male 90° angle to SPOX female connectors



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