

Stealth Products[®]



**Alternative
Drive Controls**



Power Chin Boom

Owner's Manual - Maintenance Guide
Mo-Vis Series Versatile Powered Mounting Device



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Customer Satisfaction

Stealth Products is committed to 100% customer satisfaction. Your complete satisfaction is important to us. Please contact us with feedback or suggestions to help us improve the quality and usability of our products.

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General

Read and understand all instructions prior to the use of the product. Failure to adhere to instructions and warnings in this document may result in property damage, injury, or death. Product misuse or failure to follow instructions will void the warranty.

Immediately discontinue use if any function is compromised, if parts are missing or loose, or if any component shows signs of excessive wear. Consult with your supplier for repair, adjustment, or replacement.

All persons responsible for fitting, adjustment, and daily use of the devices discussed in these instructions must be familiar with and understand all safety aspects of the devices mentioned. In order for our products to be used successfully, you must read and understand all instructions and warnings, and maintain our products according to our instructions on care and maintenance.

The installation instructions will guide you through this product's options and possibilities.

Instructions are written with the expressed intent of use with standard configurations. They also contain important safety and maintenance information, as well as describe possible problems that can arise during use. For further assistance, or more advanced applications, please contact your supplier or **Stealth Products** at (512) 715-9995 or toll free at (800) 965-9229.

Always keep the operating instructions in a safe place so they may be referenced as necessary.

All information, pictures, illustrations, and specifications are based on the product information that was available at the time of printing. Pictures and illustrations shown in these instructions are representative examples and are not intended to be exact depictions of the various parts of the product.

 CAUTION

These products are designed to be fitted, applied, and installed exclusively by a healthcare professional trained for these purposes. The fitting, application, and installation by a non-qualified individual could result in serious injury.

Warranty

Our products are designed, manufactured, and produced to the highest of standards. If any defect in material or workmanship is found, Stealth Products will repair or replace the product at our discretion. Any implied warranty, including the implied warranties of merchantability and fitness for a particular purpose, shall not extend beyond the duration of this warranty. **Stealth Products** does not warrant damage due to, but not limited to: misuse, abuse, or misapplication of product, and/or modification of product without written approval from **Stealth Products, LLC**. Any alteration or lack of serial number, where applicable, will automatically void all warranty.

Stealth Products, LLC is liable for replacement parts only. **Stealth Products, LLC** is not liable for any incurred labor costs. **Stealth Products** warrants against failure due to defective materials or workmanship:

- Covers, Headrest Pads, Cushions: 2 years**
- Hardware: 5 years**
- Electronics: 3 years**

In the event of a product failure covered by our warranty, please follow the procedures outlined below:

- Call **Stealth Products** at (512) 715-9995 or toll free at (800) 965-9229.
- Request a Return Authorization (RA) form from the Returns Department and follow the documentation instructions.

Full warranty information may be found by visiting the website at <https://stlpro.site/returns-n-warranty>, or by scanning the Warranty Information QR code located on the back cover of this manual. You can download additional copies of this manual by accessing the Stealth website (<https://stlpro.site/stealth-docs>) and searching “P120D245” in the search bar at the top of the page.

Supplier Reference

Supplier:	
Telephone:	
Address:	
Purchase Date:	
Model:	

Warning Labels

Warnings are included for the safety of the user, client, operator, and property. Please read and understand what the signal words **DANGER**, **WARNING**, **CAUTION**, **NOTICE**, and **SAFETY** mean, and how they could affect the user, those around the user, and property.

 DANGER	Identifies an imminent situation which, if not avoided, may result in severe injury, death, and property damage .
 WARNING	Identifies a potential situation which, if not avoided, may result in severe injury, death, and property damage .
 CAUTION	Identifies a potential situation which, if not avoided, may result in minor to moderate injury and property damage .
NOTICE	Identifies important information not related to injury, but possible property damage .
SAFETY	Indicates steps or instructions for safe practices, reminders of safe procedures, or important safety equipment that may be necessary.

Limited Liability

Stealth Products, LLC accepts no liability for personal injury or damage to property that may arise from the failure of the user or other persons to follow the recommendations, warnings, and instructions in this manual.

Stealth Products does not hold responsibility for final integration of final assembly of product to end user. **Stealth Products** is not liable for user death or injury.

Testing

Initial setup and driving should be done in an open area free of obstacles until the user is fully capable of driving safely.

The Power Chin Boom should always be tested without any person sitting in the wheelchair until every alteration of the physical installation or adjustment is complete.

Intended Use

The Power Chin Boom is a versatile, motorized arm intended to be mounted on a powered wheelchair. A chin joystick may be positioned on this arm and used to drive the wheelchair, and the arm can be programmed to move horizontally or vertically, when needed, at the press of a button.

Features

The Power Chin Boom is mounted to the rear (top or side) of a chair's backrest with compatible brackets.

- Using the included mounting hardware, the Power Chin Boom Motor Unit and arm can be optimally positioned for each individual user.
- With the mo-Vis Configurator Software, the device's movements, speeds, and activation methods may be customized to accommodate nearly any requirement.
- The Power Chin Boom works with any button using a mini jack connection (stereo or mono). The jack connections of the input and output are configurable via computer, e.g. one input button can be configured to perform up to three different functions.

Power Chin Boom Package

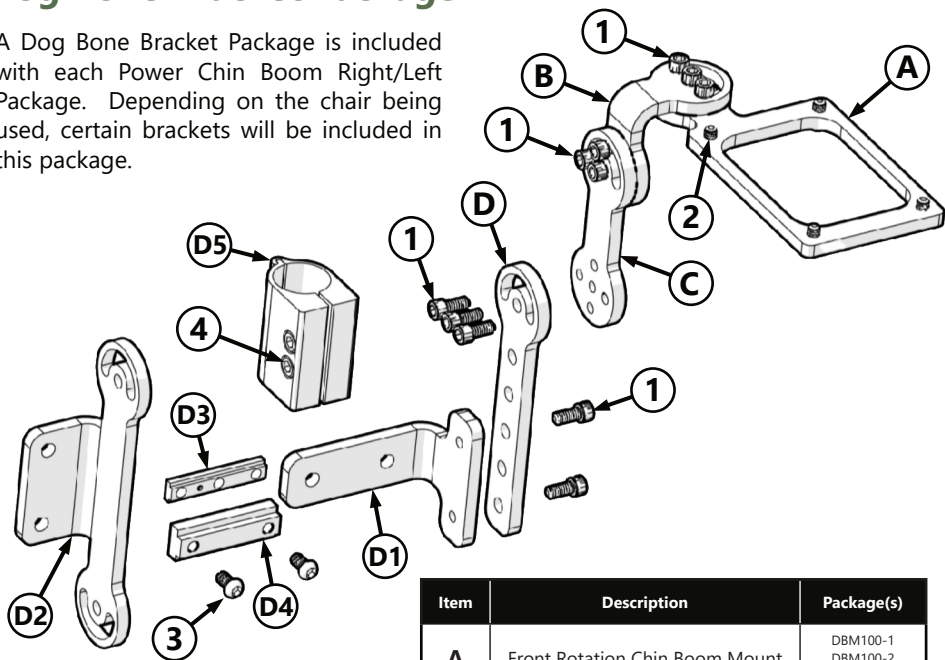
The Power Chin Boom package (Right/Left) consists of the following parts:

Part	Product Description
	Power Chin Boom Right Arm 2mm set screws included
	Power Chin Boom Left Arm 2mm set screws included
	Power Chin Boom T-Connection 3mm set screws included
	Power Chin Boom Arm to Rod Interconnection Assembly 2.5mm set screws included

Part	Product Description
	Power Chin T-Bar Connection
	Power Chin Boom Motor Unit with i-Connect Power Source 2.5mm set screws included
	Power Chin Boom C-Rod
	Power Chin Boom S-Rod
	Power Chin Boom Pulling Wire
	Power Chin Boom End Stop

Dog Bone Bracket Package

A Dog Bone Bracket Package is included with each Power Chin Boom Right/Left Package. Depending on the chair being used, certain brackets will be included in this package.



Item	Description	Qty.
1	M6 x 1.0 x 12mm Socket Head Screw	11
2	M5 x 0.8 x 12mm Button Head Screw	4
3	M6 x 1.0 x 12mm Button Head Screw	2
3'	M6 x 1.0 x 16mm Button Head Screw	2
4 ²	1/4-20 x 3/4" Socket Head Screw	2

1. Screws for the lateral track nut (D3) for mounting onto Permobil require a smaller (12mm) screw.
2. 1" Cane Clamp is only provided when ordering the DBM100-3

Item	Description	Package(s)
A	Front Rotation Chin Boom Mount	DBM100-1 DBM100-2 DBM100-3
B	Angled Chin Boom Extension	DBM100-1 DBM100-2 DBM100-3
C	Straight Chin Boom Extension	DBM100-1 DBM100-2 DBM100-3
D	Chin Boom Slide	DBM100-1 DBM100-2 DBM100-3
D1	Accessory Bar Chin Boom Mount	DBM100-2
D2	Cane/Track Chin Boom Mount	DBM100-1
D3	Lateral Nut - Metric	DBM100-2
D4	T-Nut Metric	DBM100-1
D5	1" Cane Clamp	DBM100-3

Qualified Service Technician

Only a qualified service technician may install the Power Chin Boom.

 **CAUTION**

Always secure connections with the screws or fasteners supplied with the hardware.

Joystick Mounting Sets

Product Description	Package #	Image
All-Round Joystick Mounting Set (for mounting All-Round Joystick only.	IDM-46*	
Multi Joystick Mounting Set	IDM-06 included with IDM-MULTI-9	
Micro Joystick Mounting	IDM-01 included in IDM-MICRO-9	

The All-Round Mounting Set is REQUIRED if you are mounting an All-Round Joystick to your chair.

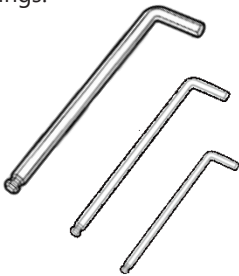
Installation Plan

Set up an installation plan before starting the installation. Based on the user’s needs, and with actual measurements of the wheelchair and the user, this plan should specify:

- 1. Where each part of the Power Chin Boom should be placed.
- 2. How the Power Chin Boom will be operated.
- 3. The Power Chin Boom Motor Unit parameter settings.

Tools Required

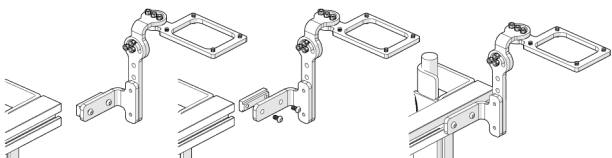
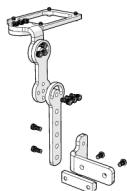
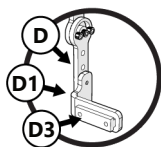
- 5mm Hex Key
- 4mm Hex Key
- 3mm Hex Key
- 2.5mm Hex Key
- 2mm Hex Key



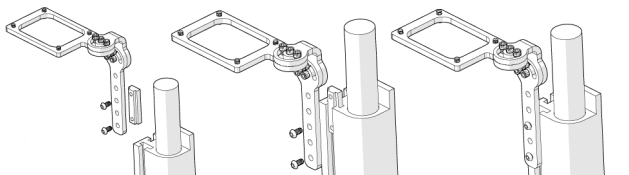
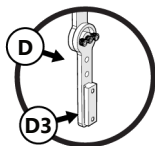
Use the proper tools to install and adjust the Power Chin Boom.
The use of improper tools may cause damage to the device.
Do not tighten screws with excessive force.

DBM100-1 Quantum Mount

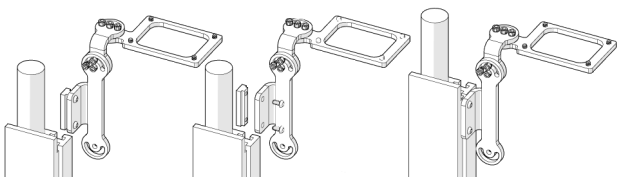
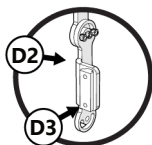
OPTION 1



OPTION 2



OPTION 3



Option 1 - Horizontal Accessory Bar

Step 1: Attach the Chin Boom Slide (D) to the Chin Boom Mount (D1). Tighten the screws to secure it.

Step 2: Attach the Angled Chin Boom Extension (B) to the Chin Boom Slide (D). Adjust the angle and fasten with screws.

Step 3: Attach the Front Rotation Chin Boom Mount (A) to the Angled Chin Boom Extension (B). Set at the desired angle and secure with screws.

Step 4: Loosely attach the T-Nut (D1) to the Chin Boom Mount (D4). Slide the T-Nut Metric (D4) into the chair's accessory bar and slide it to the desired position. Tighten the screws to secure it.

Option 2 - Vertical Accessory Bar

Step 1: Attach the Angled Chin Boom Extension (B)* to the Chin Boom Slide (D). Adjust to the desired angle and tighten the screws to secure it.

Step 2: Attach the Front Rotation Chin Boom Mount (A) to the Angled Chin Boom Extension (B). Adjust to the desired angle and tighten the screws to secure it.

Step 3: Loosely attach the T-Nut Metric (D4) to the Chin Boom Slide (D). Insert the T-Nut Metric (D4) into the chair's vertical accessory bar and slide it to the desired position. Tighten the screws to secure it.

Option 3 - Vertically on a Back Track

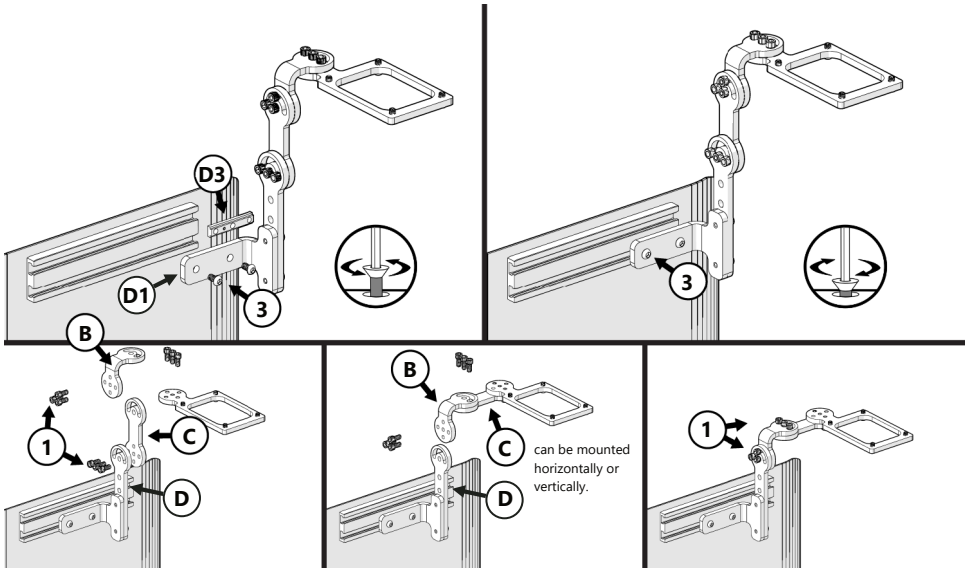
Step 1: Place the Angled Chin Boom Extension (B)* onto the Cane/Track Chin Boom Mount (D2). Adjust angle of the bracket and secure it with screws.

Step 2: Secure the Front Rotation Chin Boom Mount (A) to the Angled Chin Boom Extension (B). Adjust the angle and secure it with screws. Do not overtighten.

Step 3: Slide the T-Nut Metric (D4) to the vertical track of the chair. Secure the Chin Boom Mount (D2) to the T-Nut Metric (D4) and tighten the screws to secure it.

* The Straight Chin Boom Extension (C) may be used in all three of these options.

DBM100-2 Permobil Mount



Step 1: Loosely attach the Accessory Bar Chin Boom Mount (D1) to the Lateral Nut Metric (D3). Slide the Lateral Nut Metric (D3) into the slot in the chair's accessory bar. Place in the desired position on the chair's accessory bar and secure with screws (3).

Step 2: Attach the Chin Boom Slide (D) to the Accessory Bar Chin Boom Mount (D1). Place at the desired location and secure with screws (1).

Step 3: Mount the Straight Chin Boom Extension (C) to the Chin Boom Slide (D). Adjust the angle of the bracket and secure with screws (1).

Step 4: Place the Angled Chin Boom Extension (B) onto the Straight Chin Boom Extension (C). Adjust the angle and secure with screws (1).

Step 5: Attach the Front Rotation Chin Boom Mount (A) to the Angled Chin Boom Extension (B). Adjust the direction of the bracket and secure with screws (1).

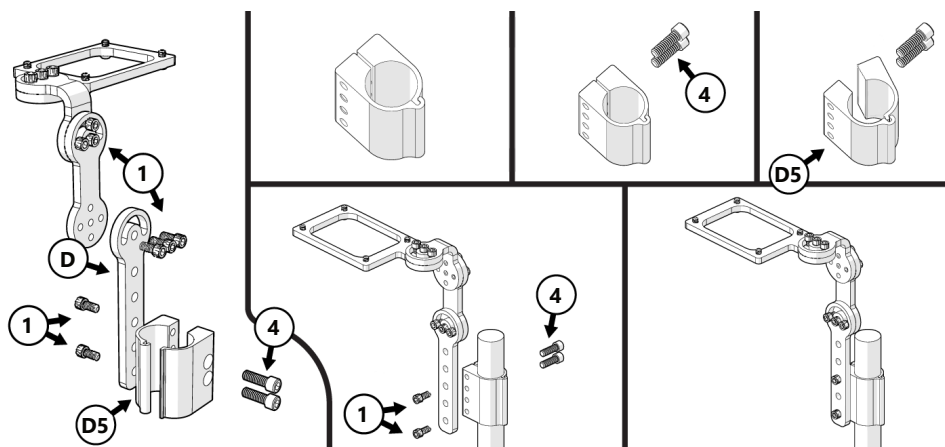


CAUTION

Do not overtighten screws.

This could cause wearing of screws or threads, causing the client to lose effective control of the device.

DBM100-3 Cane Mount



Step 1: Place the 1" Cane Clamp (D5) onto the chair. Adjust to the desired height and secure with screws (4).

Step 2: Attach the Chin Boom Slide (D) to the 1" Cane Clamp (D5). Place at the desired height and secure it with screws (1).

Step 3: Secure the Straight Chin Boom Extension (C) onto the Chin Boom Slide (D). Adjust the angle of the bracket and secure it with screws (1).

Step 4: Attach the Angled Chin Boom Extension (B) to the Straight Chin Boom Extension (C). Adjust the angle and secure it with screws (1).

Step 5: Mount Front Rotation Chin Boom Mount onto Chin Boom Extension Angled. Adjust direction and secure with screws (1).

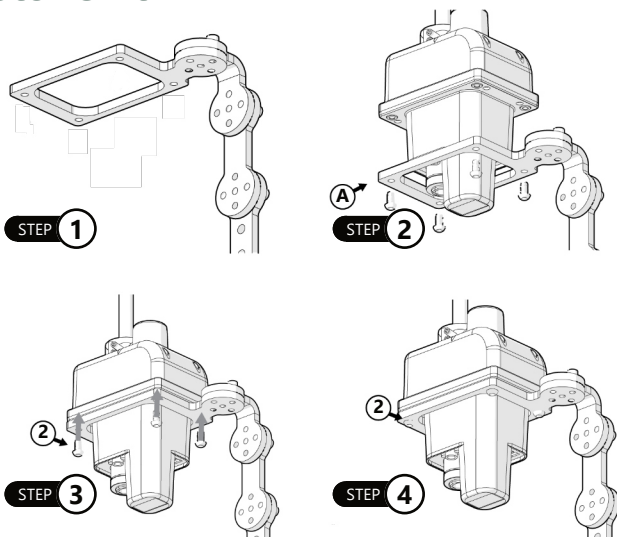
Installation of Motor Unit

Step 1: Ensure that the Front Rotation Chin Boom Mount (A) is properly secured to Chin Boom Hardware.

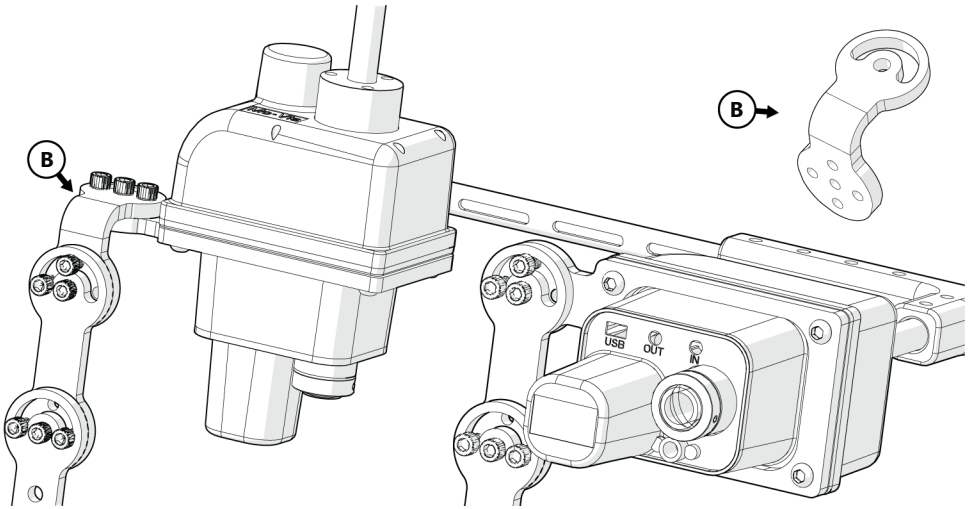
Step 2: Insert Chin Boom Motor Unit into Mount (A).

Step 3: Place 12mm Button Head Screws (2) in pre-drilled holes.

Step 4: Secure screws (2) into place. Do not overtighten.



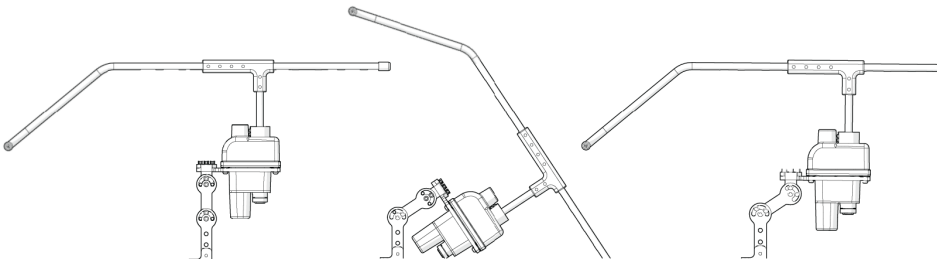
Installation for Vertical or Horizontal Mounting



When mounting the Motor Unit for a horizontal movement of the arm, attach angled bracket (B) to straight extension hardware and secure with screws.

When mounting the Motor Unit for a vertical movement of the arm, angled bracket (B) will not be attached to hardware. Attach and secure Motor Unit directly to extension straight hardware, adjust to desired angle and secure with screws.

Angle/Height Adjustment of Power Chin Boom

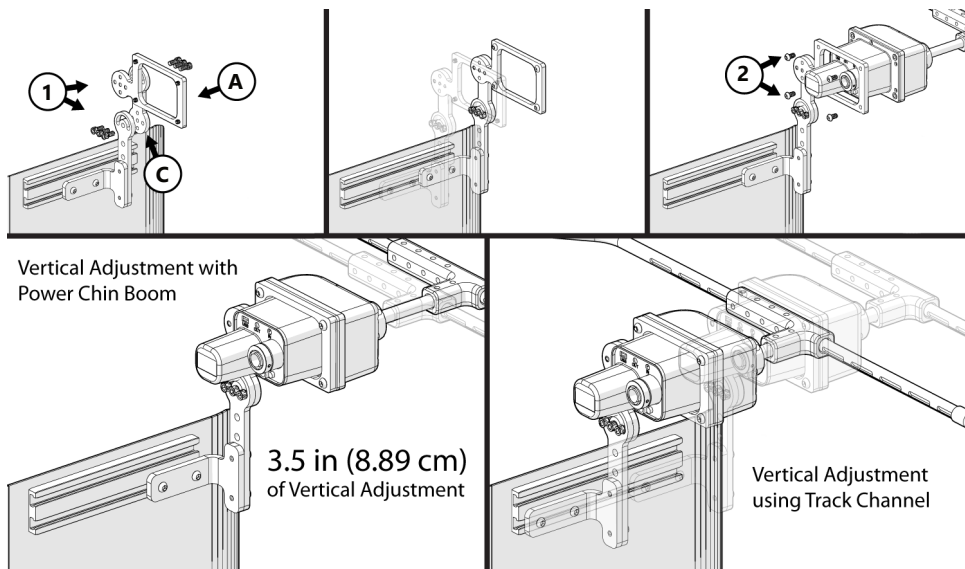


Step 1: Observe Power Chin Boom unit to see if the placement is correct for the user.

Step 2: To angle the chin boom back, loosen screws on Track Chin Boom Slide until unit is at desired angle for end user.

Step 3: Tighten screws once the chin boom is at desired angle. Do not overtighten.

Vertical Adjustment of Power Chin Boom



Step 1: For vertical adjustment on a track mount, loosen screws (1) on brackets (C) & (A). Once track is at desired location on the chair, tighten screws.

Step 2: Install motor unit onto mount and secure with screws (2).

Step 3: For vertical adjustment of the arm, loosen set screws from T-Bar Rod. Adjust rod to desired length and tighten screws.

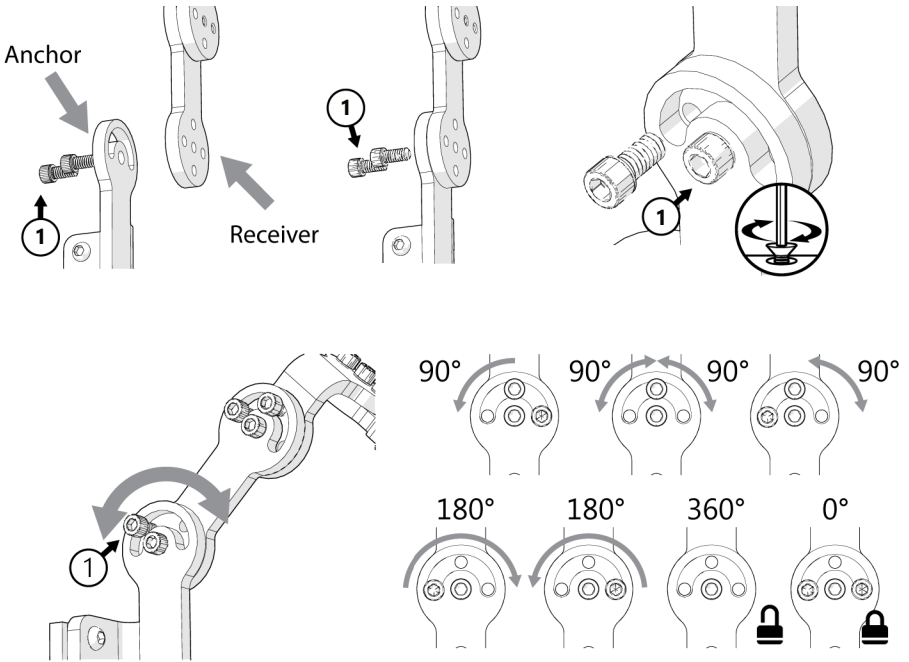
Step 4: If Power Chin Boom arm still needs adjustment, loosen screws on T-Connection and set to desired location. Tighten screws.



CAUTION

When inserting a mono jack into the input, make sure that no functionality has been programmed for the second input, i.e., initially two buttons are programmed, and subsequently a mono jack button is used, a continuous signal will still be sent if the second function was not cleared beforehand.

Installing/Adjusting Chin Boom Hardware



Step 1: When attaching brackets to one another, an anchor top **MUST** always match up with a receiver top.

Step 2: When anchor and receiver parts are matched, use screws (1) and secure.

Step 3: Insert one screw (1) into middle hole of anchor. Second and third screws can be placed in any of remaining holes on receiver.

Step 4: Adjust brackets to desired angle before fully tightening and screwing in remaining screws.

Motor Cable Installation

Use the following pictures as reference to plug in the Power Chin Boom Motor Cable to your Quantum or Permobil chair.

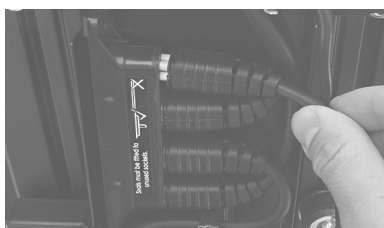
1. Remove cover at base of your Quantum or Permobil chair.



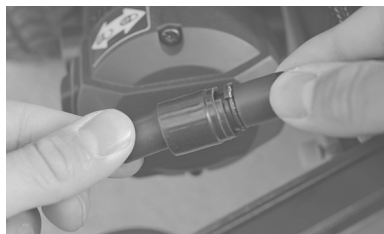
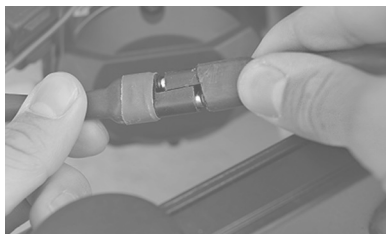
2. Locate the power plug on the Quantum chair. Remove cap off of plug to attach IC24PS-QL Power Source, attached to the Power Chin Boom Motor Cable.



If you have a Permobil chair, locate the power plug and remove.



3. Attach end of Power Chin Boom Motor Cord with IC24PS-QL or IC24PS-RN pig tail attachment to the power plug of the Quantum or Permobil chair.



Motor Unit Installation

Depending on the needed placement of the Power Chin Boom, angle and height adjustments can be made to the hardware.

If more hardware is required, the Chin Boom Brackets may be ordered as a separate package. Contact Stealth Products for more information.



CAUTION

The mount must be inside the wheelbase.
The connections must be at the bottom (default position) or at the lower part (tilted position).

Lead the i-Connect Power Source Connector to a fused connection on the wheelchair battery and secure the i-Connect Power Source Connector to the wheelchair.

- An IC24PS-QL or IC24PS-RN is required in order to connect from the power source to the chair.



WARNING

Do not connect the i-Connect Power Source Connector to the wheelchair battery or another battery source while installing or adjusting the Power Chin Boom Arm to avoid any unwanted movement.

Power Chin Boom Arm Installation

Make sure the Power Chin Boom Motor Unit is properly installed before starting installation of the Power Chin Boom Arm. The Motor Unit contains 2.5mm set screws.

To install the arm, proceed as follows according to your installation plan:



CAUTION

Any connection must always be secured with all delivered screws.
Use only the screws provided in the package.

- Insert the Power Chin Boom T-Bar connector into the motor unit. Adjust and secure with the provided set screws.
- Attach the T-connection to the T-Bar Connection. Attach and secure with provided set screws.
- Insert the Power Chin Boom Right or Left Arm into the T-connection. Adjust arm to desired length and secure with set screws.
- Place and secure Arm to Rod Interconnection Assembly. Adjust angle and secure with provided screw. Choose the rod that best fits your client's needs.



CAUTION

The dog-tip screws should fit in the slots of the arm. Select the appropriate screw location in the T-connection. Screws should be placed in such a way that they do not enter the cable throughputs in the arm.

Joystick Installation

To install the joystick onto the Power Chin Boom, proceed as follows:

- Remove the screws from the base of the interface and open the interface box. Carefully disconnect the joystick cable from the interface.
- Insert the pulling wire at the base of the arm and feed until you have reached the top of the arm. The end of the pulling wire with the hook should be inserted first.
- Use the pulling wire to insert the connection cable for the device into the arm at the top. Carefully pull down on wire and feed through until the cable is through the final slot in the arm.
- The connection cable enters at the C-Rod or S-Rod and leaves the arm just past the T-connection.
- Place the device on the C-rod or S-rod in the desired location and secure it firmly.
- Reattach and secure the joystick cable to the interface.
- Use screws to carefully screw interface box back together.
- Mount the end stop.

 CAUTION	The maximum device weight is 1.1 lb. (500g) at a distance of 25.59 in. (650mm) from the pivot point at the Power Chin Boom Motor Unit connection.
NOTICE	Disconnecting and reconnecting cables from the interface will NOT void the warranty.
NOTICE	The screws on the Power Chin Boom need to be tightened on a regular basis. There is play in the arm when it is not in the end position.
 CAUTION	Do not manually change the angle of the Power Chin Boom arm or T-connection when attached to the motor unit. This may harm the positioning and functioning of the Power Chin Boom motor unit.
SAFETY	If needed, remove excess piping at the back of the arm (behind the T-connection). Removing excess piping from the back of the arm can help to reduce the risk of objects becoming hung up or stuck. This will also ensure safety during transfers. Retain a small excess of piping at the back for future adjustments

All-Round Joystick Mounting Set

1. Define the position of the joystick.
 - When the USB connection points toward the user, a forward movement of the joystick will result in a forward movement of the wheelchair. If needed, you can change this positioning in steps of 90° with the mo-Vis Configurator Software.
2. Determine which of the two slots you will use to guide the cable.
3. Place the two M5 lock nuts in the first Mounting Plate.
4. Secure the Mounting Plate with the four M5 bolts to the base of the joystick housing.
5. Place the adapter 6mm mounting set on the rod.
6. Secure the Mounting Plate with the two M5 bolts.



- The All-Round Mounting Set (IDM-46) is sold separately and is only required for mounting the All-Round Joystick to the Power Chin Boom.



Check that all screws are firmly secured.

Installation Instructions



WARNING

Switch off the wheelchair and disconnect the Power Chin Boom Motor Unit from the power source to avoid any unwanted movement.

Testing

After installation of the Power Chin Boom Motor Unit and the Power Chin Boom Arm, test the positioning and movements of the arm.



WARNING

First, test without a person sitting in the wheelchair.

- Connect the Power Chin Boom Motor Unit to the wheelchair battery with the i-Connect Power Source Connector.

Connect a button* to the Power Chin Boom Motor Unit steering input.

Power up the wheelchair.

Push the button.

Default Power Chin Boom Motor Unit parameter settings are:

- Open/Close Arm, Momentary (arm moves as long as the button is pressed, pressing again changes the direction of movement).

Check the following items:

- Is the arm moving in accordance with the default settings?
- Can the arm move freely without hindering any wheelchair item or cable?
- Can the arm move without hindering a person in the wheelchair?
- Can all cables move freely while being securely attached?

If needed, adjust the positioning of the arm and Power Chin Boom Motor Unit and retest until optimal and secure functioning.



CAUTION

Always use a fused connection of maximum 15A on the wheelchair battery.

* A Black Egg Switch is included with each Power Chin Boom order. This switch will activate movements of the arm.

NOTICE

The All-Round Joystick Cable will not feed through the arm of the Power Chin Boom.



CAUTION

Tighten the screws firmly, but not excessively.
Excessive force may damage the unit.

The Power Chin Boom movement, speed, angle, and connection are fully adjustable with the mo-Vis Configurator Software*.

- This software must be installed and is ready to be used on a PC.
- Depending on your user profile (User, Attendant, Dealer, OEM), you will be able to change a number of parameter settings.
- To define the movements during the installation procedure, we advise having at least a Dealer profile.

Defining Parameter Settings

To define the parameter settings, proceed as follows:

- Using a standard mini-USB cable, connect the Power Chin Boom Motor Unit to a PC.
- Configure the parameters with the software.
- Upload the configuration.
- Test the configurations, and adjust if necessary.

Parameter Settings

Please refer to "Parameter Settings" section for a list of parameter settings (Page 24).

* The mo-Vis Configurator Software is optional to download. The joystick and its settings can be configured through the chair's display.

Intended Use

The Configuration Software can be used after logging in with your email address and a password obtained from Stealth Products.

- To change the default parameter values of the Power Chin Boom.
- To consult level-appropriate details of the Power Chin Boom.
- For technical diagnostic purposes.

Software requirements: Windows 10, 64-bit.

NOTICE

Never share your password with anyone and keep access to the Configurator Software strictly personal.

Operation

The Configuration Software must be installed and ready to use on your PC.

NOTICE

Make sure you have downloaded and installed the **latest** version of the Configurator Software from Stealth Products at www.stealthproducts.com.

After downloading, a shortcut with the Configurator icon is placed on the desktop. You can also find the Configurator in the **Windows Start** menu of your computer.

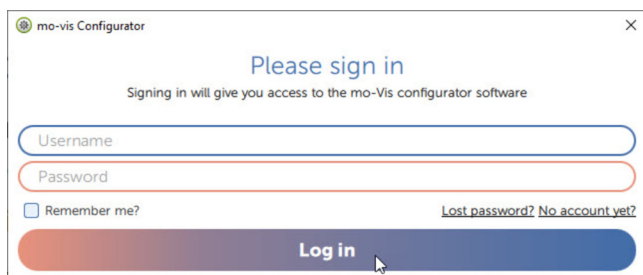
NOTICE

If an earlier version is already installed on your computer, downloading the Configurator Software will automatically delete the old and install the new version.

Starting Up

Double-click on the Configurator icon on your desktop to start the Configurator Software. The Configurator window opens.

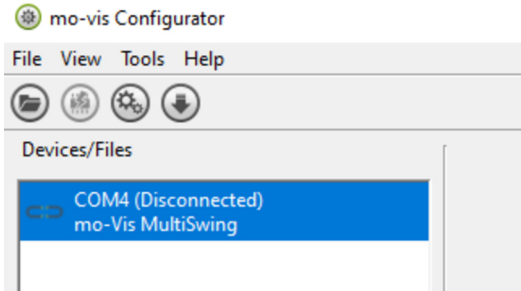
Enter your login and password.



The screenshot shows the 'mo-vis Configurator' login window. At the top, it says 'Please sign in' and 'Signing in will give you access to the mo-Vis configurator software'. Below this are two input fields: 'Username' and 'Password'. There is a checkbox labeled 'Remember me?' and a link that says 'Lost password? No account yet?'. At the bottom is a large blue button labeled 'Log in' with a mouse cursor pointing at it.

Connect your device to the PC using a USB cable (depending on the device).

A COM port is created and is visible in the Configuration window, but will still show the status **Disconnected**.



Changing the language

Go to **View > Language** and select the language you prefer (English, Dutch, French, or German). This will change the language of the Configurator, but also the language of the description of the device's parameters.

Changing the access level

The login you have received from Stealth Products determines what your highest access level is. You will start up in this level. You can downgrade your access level (e.g. dealer wants to see which settings the user has access to).

Go to **Tools > Access Level** and choose the desired level.

NOTICE

You will only see your highest allowed access level and the lower levels. For access to higher levels, please contact Stealth Products.

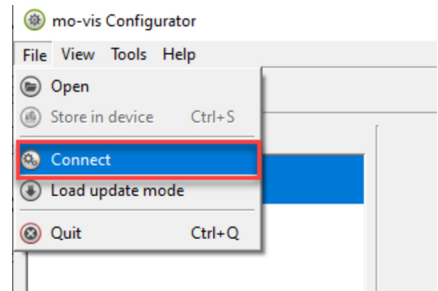
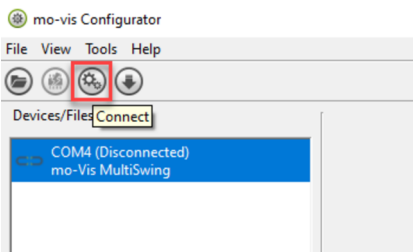
Checking the version

Go to **Help > About** to see the version of the Configurator Software in use.

Connecting the device

There are two different ways to establish a connection:

1. Click on the **Connect** icon in the icon bar.

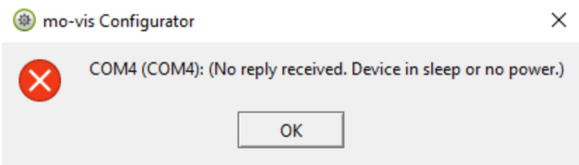


2. Go to **File > Connect**.

To disconnect, click on the same icon or go to **File > Disconnect**.

NOTICE

Make sure the device gets power and is not in 'sleep mode'. You will receive the error message shown below when this is not the case.



Please refer to the manual of the connected device when it is in sleep mode. After, try to connect again.

NOTICE

It is possible to connect multiple devices simultaneously and to view and compare their general information, details and parameter settings.

Quitting the software

To close the Configurator software, choose **File > Quit** or click on the X in the upper right corner.

NOTICE

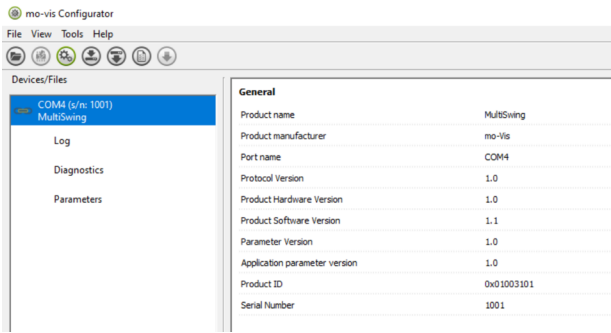
If you quit the software by clicking on the X in the upper right corner of the window without storing the changes in the device first, the software will automatically ask if you want to save your changes before closing.

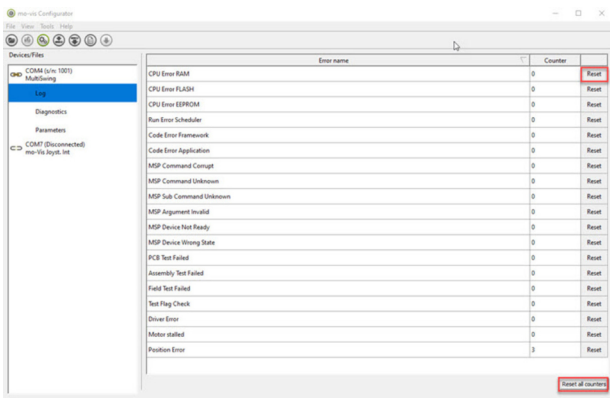
Accessing details of the device

Once the connection is made, the Configurator gets all the details and general information from the device and displays them on the right hand side of the window.

General information

Click on the tab that contains the COM port name, serial number, and product name to view all the general information on the right-hand side of the window.





Error Log

Click on **Log** in the device view to see an overview of all occurred errors, with the number of times they have occurred.

Click on **Reset** to reset the counter to zero.

Click on **Reset all counters** to reset all counters at once.

NOTICE

This is only active from Access Level Dealer and higher.

NOTICE

The changes are saved automatically and immediately.

Diagnostics of the device

Click on **Diagnostics > Field Diagnostic Test > Run** to start a diagnostic test. The information you get there can be important for service purposes.

NOTICE

Please refer to the manual of the connected device before starting the test.

CAUTION

Always change parameters and test the outcome without anyone sitting in the chair.

WARNING

Changes in parameter settings may cause damage to the device or power chair, or may cause injury to people.

Configuration of the device

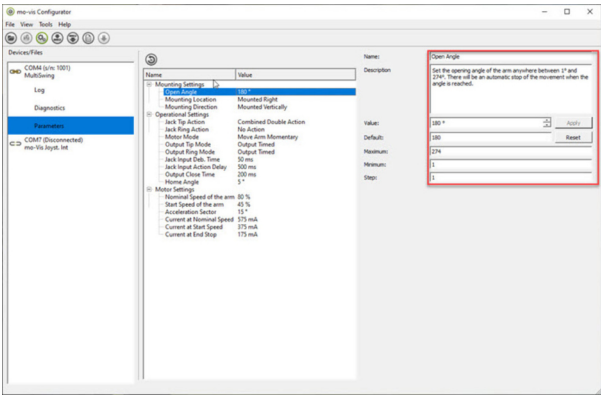
When you select Parameters, a list of parameters will be shown, depending on the device that is connected to the PC.

Changing parameters

Click on a parameter to see the current value as well as the default, maximum, and minimum value and step (if applicable). You also get a description box with information regarding that parameter.

You can change this parameter value by entering a new value in the text box, by clicking arrows next to the text box or by selecting a new value from the drop-down box.

Software Configuration

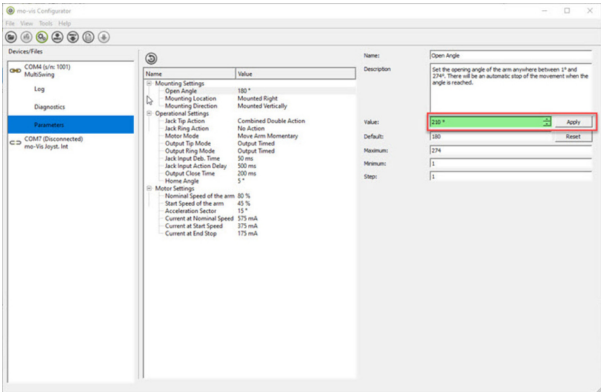


NOTICE

You can now test the adjustment, but the new value is not stored in the device yet. If you lose connection, any changes you have made so far will be lost. If you click on the **Disconnect** button, you will receive a warning.

NOTICE

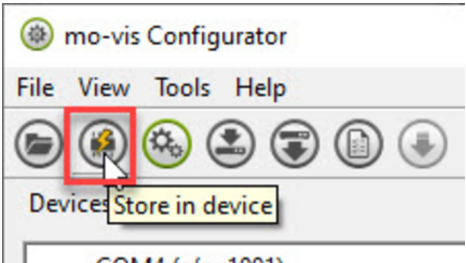
When you change parameter values, but do not click on Apply, the new values will not be activated and when you click on another parameter, the change will be forgotten.



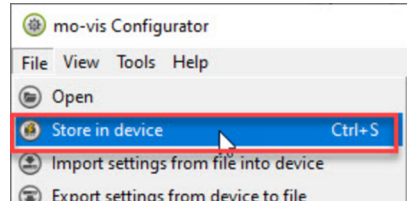
Changed values are highlighted in green. Click **Apply** to write the value temporarily into the device.

If you want to save this value permanently into the device, there are two options:

- 1. Click on the **Store in device** icon in the icon bar.



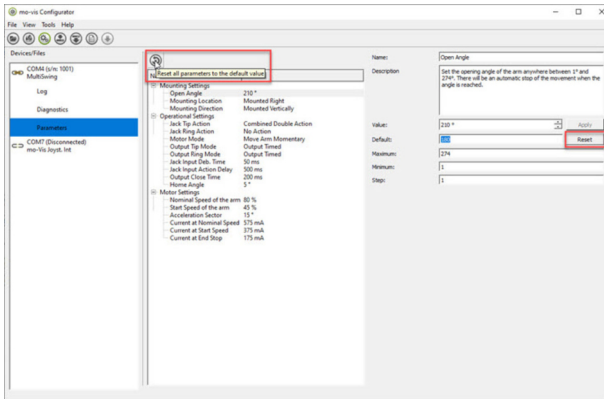
2. Go to **File > Store in device**.



Resetting Parameters

Click on **Reset** to change this specific parameter back to the default value. Click **Apply** to store temporarily and **Store in device** to save permanently.

Click on **Reset all parameters to the default value** to reset the entire device to its default values.



Export and import of parameter sets

When you have configured a device according to the needs of a user, you can save these settings and store the file on a computer.

NOTICE

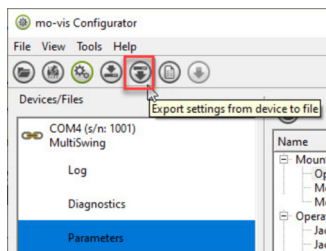
This can be useful when the user contacts you with questions regarding their device. It can also be useful if you want to reuse the settings of this user as a template for other users.

NOTICE

Before you can export the settings, you have to store the new configuration in the device.

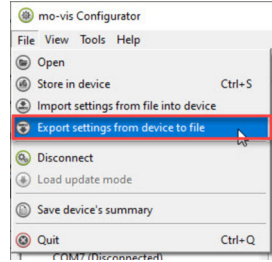
To export:

1. Click on **Export settings from device to file** icon.



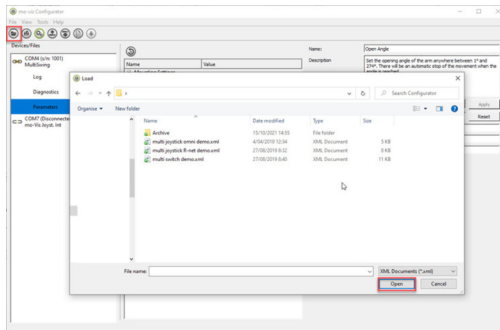
2. Click on **File > Export settings from device to file**.

You will be able to name and save the parameter set.



Opening a saved parameter set

Click on the **Open a file** icon or go to **File > Open** and a window will open where you can select a saved file of a device. Click **Open** and the file will be displayed in the device window.



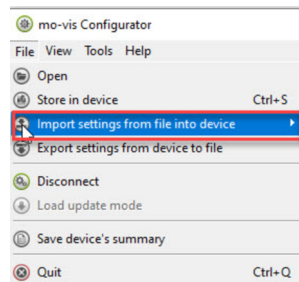
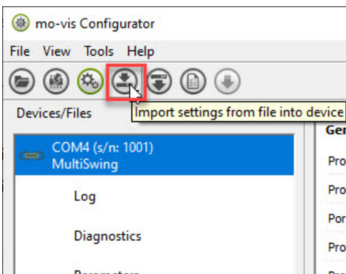
When you click on a parameter of the open file, you will be able to modify the parameter settings. See **Changing Parameters**.

Once the open file has been modified, there are two options:

1. You can save the file again on your computer
 - Click the **Save** icon or go to **File > Save** to replace the existing file on your computer.
 - Click the **Save as** icon or go to **File > Save as** to save a new file with a new name.
2. Or import the file directly into a connected device. See **Import settings from a file into a device**.

Import settings from a file into a device

Click on the connected device in the configurator window and click on the **Import settings from a file into the device** icon or go to **File > Import settings from a file into the device**.



device. A new window opens in which you can search for a saved file.

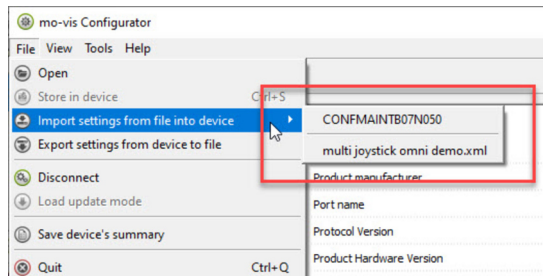
If you have already opened a file in the Configurator, a small window will appear with the option to open an existing file or to select the already opened file.

Select the file you want to store in the device and a new window opens with an overview of the differences in settings between the file to be loaded and the current settings in the device. If you agree, press **Yes** and **OK** in the information box.

NOTICE

The device must be connected, otherwise the function is not available

To save the new settings into the device, click on the **Store in device** icon or go to **File > Store in device**.



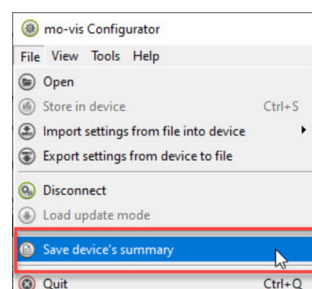
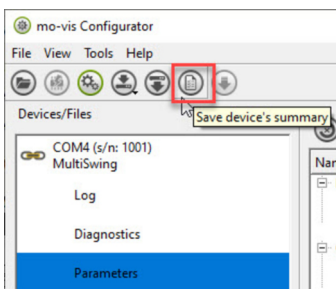
NOTICE

The connected device must be of the same type as the device from the open file. An error message will appear if this is not the case.

Save device's summary

You can save all general product information and values of the different parameters into a file, which you can save on your computer. This can be important information to send to the Stealth Products support team.

1. Make sure the device is connected to the USB port of the PC.
2. If it is recognized, it will appear in the device view on the left side of the Configurator window.
3. Select the correct device in the device view.
4. Click on **File > Save device's summary** or click on the **Save device's summary** icon.



5. Choose a location to save the file and give it a name.

Updating the software

The software of a device can be updated. This action requires support from Stealth Products to be completed safely and correctly.

Operation Modes

There are three operation modes that can be triggered from both input channels and can be configured in the operation modes with the mo-Vis Configurator Software.

Normal Operation Mode:

- One Action per Channel: Move the arm or operate an output.

Combined Double Action, 2 actions per channel:

- To Activate: Set the 'Output Mode Tip' to 'Output Timed'.
- Press Short: Trigger the Output Tip for predetermined amount of time.
- Press Long: Operate the arm.

Combined Triple Action, 3 actions per channel:

- To Activate: Set the 'Output Mode Tip' to 'Output Timed'.
- Press shortly once (single click): Trigger the Output Tip for a predetermined amount of time.
- Press shortly twice (double click): Trigger the Output Ring for a predetermined amount of time.
- Press long: Operate the arm for as long as the button is pressed.

Do not forget to set both the 'Output Mode Tip' and 'Output Mode (Ring)' to 'Output Timed', otherwise the outputs will not be functional. This is to avoid outputs used for drive safety being unavailable or losing critical functionality.

Drive Safely

With the mo-Vis Configurator Software, you can set the output to be triggered when the arm is in the home position.



CAUTION

When the Power Chin Boom is in sleep mode and the arm is moved manually - although it is not advised - it can take 5 to 10 seconds before the output will react to the new positioning of the arm.

Troubleshooting

Below is a list of possible problems and their possible causes and solutions:

Problem	Possible Cause(s)	Solution(s)
Arm does not move	- No Power	- Check whether all power cables are still attached - Check battery level
	- Bad or wrong connection of the button - Faulty button or wiring	- Check whether the button cable is still firmly attached to the correct terminal - Connect a different button - Change the wiring
	- The device mounted is too heavy	- Dismount the device
Arm keeps moving	- Bad connection of the button - Faulty button or wiring	- Disconnect and reconnect the button - Disconnect and reconnect the power supply cable - Connect a different button - <u>Change the wiring</u>
Arm does not complete the foreseen trajectory	- Arm movement is hindered	- Free trajectory of the arm
	- The device mounted is too heavy	- Dismount the device
	- Wrong parameter settings	- Change the settings

If your problem is still persistent post-intervention, please contact your local dealer or Stealth Products for assistance.

Error Codes

Fault	Reason	Required Action
CPU Error RAM	CPU Consistency Check Failed	Replace PCB
CPU Error FLASH		
CPU Error EEPROM		
Run Error Scheduler	Firmware Consistency Check Failed	Update Software or Replace PCB
Code Error Framework		
Code Error Application		
MSP Command Corrupt	Corrupt command was received	Connection with the PC (Configurator Program went wrong. Try again.
MSP Command Unknown	Unknown command was received	Connection with the PC (Configurator Software) went wrong. Update firmware or update Configurator Software. Try again
MSP Subcommand Unknown	Unknown subcommand was received	
MSP Argument Invalid	Invalid argument received	
MSP Device Not Ready	Device is not ready to receive an MSP command	
MSP Device Wrong State	The device is not able to receive a command in the current device state.	Connection with the PC (Configurator Software) went wrong. Update firmware or update Configurator Software. Try again
PCB Test Failed	Factory Test Failed	A fault occurred during factory testing
Assembly Test Failed		
Field Test Failed	Field Test Failed (Calibration)	A fault occurred during field testing (calibration)
Test Flag Check	One or more test flags not set.	Redo tests and/or Replace PCB
Driver Error	The PWM driver signals a problem	Check motor and mechanics. Replace PCB.
Motor Stalled	Motor is not moving when it should be moving.	Check motor, potentiometer and mechanics and/or Replace PCB

With the mo-Vis Configurator Software you can change the parameters of the Power Chin Boom. Depending on your user profile (User, Attendant, Dealer, OEM, you will be able to change a number of parameters.

Mounting Settings (User Level)

Setting	Description	Parameters	
Open Angle	- The opening angle of the arm.	Default	180°
		Min	1°
	- Automatic stop of the movement when the angle is reached.	Max	274°
		Steps	1
Mounting Location	- Right Mount	- Right (default)	
	- Left Mount	- Left	
Mounting Direction	- Horizontal Mount; arm moves left/right.	- Horizontal (default)	
	- Vertical Mount; arm moves up/down.	- Vertical	

Operational Settings (User Level)

Normal Operation

- In this case the button will cause a direct action. The action could move the arm or operate an output.

Combined Double Action

- In this case the button is used to control both an output and move the arm.
- When the button is closed shortly the Output Tip will be closed for a fixed, settable time (see Settings).
- Pressing the button longer will operate the arm. Depending on the settings the arm will move as long as the button is pressed until the range of travel is reached.

Combined Triple Action

- In this case the button is used to control both outputs and move the arm.
- When this button is pressed shortly once (single click) the 'Output Tip' will be closed for a fixed, settable time (see Settings).
- When the button is pressed shortly twice (double click) the 'Output Ring' will be closed for a fixed, settable time (see Settings).
- Pressing the button longer will operate the arm. Depending on the settings the arm will move as long as the button is pressed or until the range of travel is reached.

Do not forget to set both the 'Output Mode Tip' and 'Output Mode Ring' to 'Output Timed'. Otherwise the output(s) will not be functional. This will avoid a situation where outputs used for drive safety would lose their function.

Jack Tip Action

- Use this action when a button is connected to the tip of the input jack (this is the case when no splitter is used) and a mono jack or standard button with mono jack.

Parameter	Setting
Combined Double Action	Two actions are executed with the same button.
Combined Triple Action	Three actions are executed with the same button.
Open/Close Arm (default)	Open/Close arm, the direction will alternate.
Open Arm	Open the arm.
Close Arm	Close the arm.
Operate Output Tip	Actuate the tip of the output jack.
Operate Output Ring	Actuate the ring of the output jack.
No Action	Nothing will happen.

Jack Ring Action

- Use this action when a button is connected to the ring of the input jack (use a splitter cable to access the ring of the jack).

Parameter	Setting
Combined Double Action	Two actions are executed with the same button.
Combined Triple Action	Three actions are executed with the same button.
Open/Close Arm (default)	Open/Close arm, the direction will alternate.
Open Arm	Open the arm.
Close Arm	Close the arm.
Operate Output Tip	Actuate the tip of the output jack.
Operate Output Ring	Actuate the ring of the output jack.
No Action	Nothing will happen.

Motor Mode

Parameter	Setting
Move Arm Momentary (default)	The arm moves as long as the button is pressed
Move Arm to End	The arm moves towards the end even after the button has been released. Pushing the button again will stop the arm.

Output Tip Mode

Parameter	Setting
Output Momentary	The output is closed as long as the button is pressed.
Output Timed (default)	The output is closed for a set time (see 'Output Close Time').
Output Switched	- The output acts as a switch. - Press the button to open/close. - This is also called toggle mode.
Output Drive Close	The output is closed when driving is allowed (related to home angle parameter).
Output Drive Open	The output is open when driving is allowed.
Output Close	The output is always closed.
Output Open	The output is always open.

Output Ring Mode

Parameter	Setting
Output Momentary	The output is closed as long as the button is pressed.
Output Timed (default)	The output is closed for a set time (see 'Output Close Time').
Output Switched	- The output acts as a switch. - Press the button to open/close. - This is also called toggle mode.
Output Drive Close	The output is closed when driving is allowed (related to home angle parameter).
Output Drive Open	The output is open when driving is allowed.
Output Close	The output is always closed.
Output Open	The output is always open.

Parameter Settings

Setting	Description	Parameters	
Jack Input Debounce Time	- Debounce time is the time the button needs to be pressed continuously before an action will occur - Use this action to avoid multiple actions in cases such as tremor.	Default	50ms
		Min.	10ms
		Max.	2500ms
		Steps	10
Jack Input Action Delay	- Only in combination with combined double/ triple action. - Sets the delay time. The button must be pressed (once or twice depending on the input mode) to trigger. - Pressing the button longer will operate the arm.	Default	500ms
		Min.	100ms
		Max.	5000ms
		Steps	10
Output Close Time	- The time the output will be closed if 'Output Timed' is set for an output.	Default	200ms
		Min.	20ms
		Max.	5000ms
		Steps	10
Home Angle	- When the arm is near the home position (mechanical end-stop). To set an output to indicate the position of the arm. - Used, for instance, to inhibit driving when the arm is not in drive position. - See also 'Output Tip Mode' and 'Output Ring Mode'	Default	5°
		Min.	5°
		Max	30°
		Steps	1



CAUTION

Due to product optimizations, the default setting values stated above may deviate.

Motor Settings (Dealer Level)

Setting	Description	Parameters	
Nominal Speed of the Arm	- To set the nominal speed. - Increase this value only for light loads - Increasing this speed may cause the current limit to be reached too soon.	Default	80%
		Min.	60%
		Max.	100%
		Steps	1
Start Speed of the Arm	- To set the start/end speed. - Decrease this value only for light loads - Decreasing this speed may cause the current limit to be reached at the start.	Default	45%
		Min.	30%
		Max.	50%
		Steps	1
Acceleration Sector	- Determines how far the arm needs to move to go from min to max speed or vice versa. - The smaller the angle, the higher the acceleration/deceleration will be. - Decrease this value only for light loads	Default	15°
		Min.	10°
		Max.	50°
		Steps	1
Current at Nominal Speed	- Motor current limit at nominal speed. - Increasing this value too much may cause the slip coupling to be actuated.	Default	500mA
		Min.	100mA
		Max	3500mA
		Steps	5
Current at Start Speed	- Motor current limit at start. - Increasing this value too much may cause the slip coupling to be actuated unnecessarily.	Default	375mA
		Min.	50mA
		Max.	2500mA
		Steps	5
Current at End Stop	- Motor current limit when reaching the end stop. - Increasing this value too much may cause the slip coupling to be actuated unnecessarily.	Default	140mA
		Min.	50mA
		Max	2500mA
		Steps	5


CAUTION

Due to product optimizations, the default setting values stated below may deviate.

Hardware Settings (OEM Level)

Setting	Description	Parameters	
Motor Voltage	- The voltage of the motor used in the design	Default	12000mV
		Min.	5000mV
		Max.	24000mV
		Steps	100
Voltage/Current Comp	- Use this setting to adjust the motor and PWM driver. - The device will try to keep the speed of the motor constant, independent of the supply voltage. This also depends on the motor and PWM driver adjustment	Default	120
		Min.	50
		Max.	200
		Steps	1
PWM Offset	-The PWM driver has a rise/fall time. The PWM cycle needs to be increased to compensate for this effect. - This value depends on the driver used and should not be changed for a certain hardware design.	Default	10
		Min.	0
		Max.	25
		Steps	1
Power Factor	- Use this setting to increase the power to the motor to compensate a speed drop. -When the current consumption of the motor increases, the motor speed will slightly drop. - Do not set this value too high. The speed is not meant to be kept perfectly constant. A value too high might cause oscillations or the current limit could be reached to...	Default	10
		Min.	0
		Max.	50
		Steps	1
Inrush Time	- Use this setting to allow an increased current (in ms) during the inrush moment to avoid the current limit to be activated. - When the motor starts, an elevated current is used during a short time: the inrush current.	Default	150ms
		Min.	100ms
		Max.	1000ms
		Steps	10
Inrush Over Current	- Use this setting to allow an increased current (in %) during the inrush moment to avoid the current limit to be activated. When the motor starts, an elevated current is used during a short time: the inrush current.	Default	150%
		Min.	100%
		Max	250%
		Steps	10
Stall Time	-When the main axle is not moving during the set time, the electronics will assume the motor stalled and power to the motor will be stopped.	Default	5000ms
		Min.	100ms
		Max.	10000ms
		Steps	100
Stall Angle	- When the main axle has moved more than the set angle, the stall counter is reset.	Default	1°
		Min.	1°
		Max.	10°
		Steps	1
Switch Input Debounce Time	Debounce time is the time the switch needs to be closed continuously before an end stop is detected. This can be used to compensate for switch vibrations when the hardware is equipped with end-switches	Default	50ms
		Min.	10ms
		Max.	2500ms
		Steps	10



CAUTION

Due to product optimizations, the default setting values stated below may deviate.

Product Description & Code

- Power Chin Boom Package (IDM-PCB-L) (IDM-PCB-R)
 - Power Chin Boom Motor Unit
 - Power Chin Boom T-Connection
 - Power Chin Boom Arm to Rod Interconnection
 - Power Chin Boom Right Arm
 - Power Chin Boom C-Rod
 - Power Chin Boom S-Rod
 - Power Chin Boom Pulling Wire
 - Power Chin Boom End Stop
 - Black Egg Switch
- All-Round Joystick Mounting Set (for mounting All-Round only)(IDM-46)
- Power Chin Boom Hardware - Quantum (DBM100-1)
- Power Chin Boom Hardware - Permobil (DBM100-2)
- Power Chin Boom Hardware - Cane (DBM100-3)
 - Track-Cane Chin Boom Mount
 - Front Rotation Chin Boom Mount
 - Back Track Chin Boom Mount
 - Chin Boom Extension Straight
 - Track/Cane Chin Boom Slide
 - Chin Boom Extension Angled
 - 1" Cane Clamp
 - Universal 2GTR lateral nut - metric
 - T-Nut Metric

Interface Connectors

- 1/8" (3.5mm) stereo jack in
- 1/8" (3.5mm) stereo jack out
- Mini USB

Maximum Torque Arm

- 3.25 N·m (500g load at 65cm from pivoting point)

Sleep Mode Timer

- 120s

Power Chin Boom Dimensions

- Power Chin Boom Motor Unit - 6.476 in. Height
4.134 in. Depth
- Power Chin Boom Arm - 19.685 in. End of arm to start of angle
8.11 in. End of angle to tip of arm

Voltage Supply

- 16V to 26V

Output Drive Safety Update Time

- (In sleep mode) 5s

Power Consumption

- Sleep mode: 1.56mA
- Active mode, with inactive motor: 5.2mA
- Active mode: with active motor up to 1000mA

EMC Requirements

The electronics of a power wheelchair and its options can be affected by external electromagnetic fields (for example from mobile telephones). Similarly, the electronics of the wheelchair or options themselves can also emit electromagnetic fields that can affect the immediate surroundings (for example certain alarm systems in businesses.)

The limit values for Electromagnetic Compatibility (EMC) with respect to power wheelchairs are set the harmonized standards for the EU in the Medical Devices Directive. No. 93/42/EEC. Power Chin Boom complies with these limit values.

Installation Date_____/_____/_____

Dealer:_____

Dealer Assistance

During first time use by the user it is advised that the dealer or service technician assists and explains the different drive configurations to the customer (the user and/or attendant).

If needed the dealer can make final adjustments.

User Testing

It is important that the customer is fully aware of the installation, how it is used, and what can be adjusted in order to gain as much mobility as possible. As a dealer, proceed as follows:

- Explain and show the customer how you have executed the installation, and explain the function of every (new) button.

Have the user test all positions of the Power Chin Boom Motor Unit and arm:

- Is the arm moving in accordance with the settings?
- Can the arm move freely without hindering the person in the wheelchair?
- Is the placement of the arm and buttons in all available positions optimal for the user?

If needed, adjust the Power Chin Boom and retest until optimal position and functioning is reached.

To explain to the customer possible problems and how to address them, see the "Troubleshooting" section on Page 22.

Conditions of Use

The Power Chin Boom is intended for use as installed by the dealer, in accordance to the installation instructions in this manual.

- The foreseen conditions of use are communicated by the dealer or service technician to the user and/or attendant during the first time use.
- If the conditions of use change significantly, please contact your dealer or a qualified service technician to avoid excessive wear and tear or unintended damage.

User Adjustments

- As a user or attendant, you can make a limited number of parameter adjustments yourself with the mo-Vis Configurator Software.
- Although the number of parameters you can change as a user or attendant is limited, we advise changing only parameters you completely understand.



CAUTION

Change parameters and test new settings without any person sitting in the chair.



WARNING

Changes in parameter settings may cause damage to devices of the wheelchair, or may cause injuries to persons.

Cleaning

Clean all parts of the Power Chin Boom on a regular basis (monthly), or whenever needed.

- Gently remove dust and dirt with a damp cloth.
- Use only non-aggressive household cleaning agents.



WARNING

Do not immerse the Power Chin Boom Motor Unit in water.
Do not use excessive amounts of liquid when cleaning.

Monthly Check

Monthly or when needed, check whether:

- All bolts and screws are still firmly tightened.
- There is no damage to any wiring.
- There is no excessive wear to any of the parts.



CAUTION

Do not apply additional lubricants to the moving parts of the Power Chin Boom Motor Unit.

Power Chin Boom Motor Unit Maintenance

The Power Chin Boom is maintenance free. Under regular use circumstances, the Power Chin Boom Motor Unit and different parts do not require additional maintenance.



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Warranty Information



Home Page



Online User Manual



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