

Stealth Products

Alternative Drive Controls



**OWNERS MANUAL**



## Twister

Stealth's mo-Vis Series Mechanical Normal  
Open Switch



Stealth Products strives for 100% customer satisfaction. Your complete satisfaction is important. Please contact us with feedback or suggested changes that will help improve the quality and usability of our products.

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## General

The Twister switch is a single mechanical open switch intended to act as an additional activation site along with the Multi Joystick and All-Round Joystick.

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 due to failure of the following instructions will void the warranty.

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

If this document contains information you do not understand, or there are concerns about safety or operation, contact your supplier.

## Important Information!

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.
- Maintain our products according to our instructions on care and maintenance.
- Devices should be installed and adjusted by a trained technician.

## Supplier Reference

Supplier: \_\_\_\_\_

Telephone: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Purchase Date: \_\_\_\_\_

Model: \_\_\_\_\_

Before you install or begin using this product, it is important that you read and understand the content of these installation and operating instructions.

The installation instructions will guide you through the options and possibilities with the Stealth mo-Vis Series Twister.

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 1 (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.

## Ordering Documentation

You can download additional copies of this user manual on the Stealth website:  
[www.stealthproducts.com](http://www.stealthproducts.com)

Or search:

mo-Vis Twister Owners Manual in the search bar at the top of the page.

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, LLC does not warrant damage due to, but not limited to:

- Misuse, abuse, or misapplication of products.
- Modification of product without written approval from Stealth Products, LLC.
- Any alteration or lack of serial number, where applicable, will automatically void this warranty.
- Stealth Products, LLC is liable for replacement parts only.
- Stealth Products, LLC is not liable for any incurred labor costs.

No person is authorized to alter, extend, or waive the warranties of Stealth Products, LLC.

Stealth Products warrants against failure due to defective materials or workmanship:

Covers: 180 days

Hardware: 5 years

Electronics: 3 years

## **In Case of Product Failure**

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

1. Call Stealth at +1 (512) 715-9995 or toll free +1-800-965-9229.
2. Request the Returns Department or obtain an RA from the Returns Department and follow department or documentation instructions.


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## Warning Labels

### 6.1

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

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

## Limited Liability

### 6.2

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

## Testing

### 6.3

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

The Twister should always be tested without any person sitting in the wheelchair until every alteration of the physical installation or adjustment of the joystick it is connected to is complete.



## Intended Use

## 7.1

The Twister is a small, durable, and reliable single switch which requires only the slightest touch on its surface for activation. Up to two switches can be plugged into either the interface of the mo-Vis joysticks (can be plugged into the interface ONLY of the Micro), or the inputs on the joysticks (Multi and All-Round only) and used as a power switch for on/off, or mode functions.

## Features

## 7.2

The Twister switch:

- Is available in four different styles:
  - Twister Basic Button
  - Twister on Bent Tube
  - Satellite Twister (Compatible with All-Round Joystick only)
  - Twister Dome Switch
- Requires minimal force (30g, .067 lbf)
- Has a small surface diameter:
  - .67in (17mm)
  - .5mm distance to activation
- 1/8" (3.5mm) mono jack plug

## Available Twister Switches

## 8.1



Product Description	Part Number
Twister Basic Cable (available in 5 colors)	Yellow (IDM-24)
	Black (IDM-25)
	Red (IDM-26)
	Blue (IDM-27)
	Green (IDM-28)
Twister on Bent Tube, Long Cable (1500mm)	Red (IDM-34)
	Black (IDM-35)
	Yellow (IDM-36)
	Blue (IDM-37)
	Green (IDM-38)
Twister on Bent Tube, Short Cable (300mm)	Black (IDM-41)
	Red (IDM-42)
	Yellow (IDM-43)
	Blue (IDM-44)
	Green (IDM-45)



Product Description	Part Number
Satellite Twister (Compatible with All-Round Joystick only)	Red (IDM-17)
	Black (IDM-18)
	Yellow (IDM-19)
	Blue (IDM-20)
	Green (IDM-21)
Twister Dome Switch	Red (IDM-53)
	Black (IDM-54)
	Blue (IDM-55)
	Green (IDM-56)
	Yellow (IDM-57)

## Specifications

## 8.2

Action	Description
Switch Type	Mechanical, Normal Open
Connection Type	Wired
Activation Type	Pressure
Activation Surface Diameter	.67in (17mm)
Travel Before Activation	.02in (.5mm)
Activating Force	30g (.067 lbf)
Feedback	Auditory Click, Tactile
Plug Size	1/8" (3.5mm) mono jack
Cable Length	59.05in (1500mm)

## Preparations

### 9.1

Only a qualified service technician may install the Twister switch.

Use the proper tools to install and adjust the Twister switch. The use of improper tools may cause damage to the device.

## Installation Plan

### 9.2

Set up an installation plan before beginning the installation. This plan should take into account:

- Where the Twister switch should be placed on the chair.
- What functions you would like for this switch to do.
- The positioning of the basic twister switch. Do not place any of the Twister switches where they may be obstructed from performing the function they were intended for.

#### **WARNING**

An incorrect programming of the wheelchair electronics may cause damage to the devices or injury to the user.

#### **CAUTION**

Any connection must always be secured with all delivered screws. Only use the screws provided in the package.

#### **WARNING**

All wheelchair electronics must be switched off.

## Twister On Bent Tube

## 9.3

- Diameter of Twister rod-6mm (.236in)
  - Length of Twister rod-100mm (3.94in)
  - Each Bent Tube is provided with a Quick-to-Mount clamp that splits in 2 parts in order to allow the cable to run through the switch. It can be mounted on a 6mm rod.
  - Compatible with any joystick but cannot be mounted onto the All Round Joystick.
1. Slide Q2M Clamp onto and 6mm rod (compatible with Power Chin Boom, C-Rod or S-Rod).
  2. Adjust the height of the twister switch by sliding it along the split clamp provided.
  3. When the switch is at the desired height, use a 3mm T-Handle to tighten the clamps on the tube.
  4. Plug into the power or mode inputs on the joystick.



## Twister Basic

## 9.4

- The Twister is mounted on a plate of metal/plastic with 2 screws. A regular Phillips Screwdriver is required to mount screws.
- 2 Types of screws delivered:
  - Diameter 2.2mm (0.087 in)  
Length 6.5mm (0.266in) for sheet thickness 0.5mm (0.02 in) to 2mm (0.079 in)
  - Diameter 2.2mm (0.087 in)  
Length 9.5mm ( 0.374in) for sheet thickness 3mm ( 0.118 in) to 4.5mm ( 0.177 in)
- The screws are self-tapping metal screws (A2 stainless steel).
- Compatible with any joystick.



## Satellite Twister

## 9.5

- The Satellite Twister comes with a special All-Round insert. This fits only into the housing of the All-Round Joystick.
- Diameter of Satellite Twister rod- 6mm (.236in)
- Length of Satellite Twister rod- 100mm (3.94in)

You can mount one or two Satellite Twisters to the All-Round Joystick.

1. Define the location of the Satellite Twisters: left, right, or on both sides.
2. Unscrew and remove the cover for the Satellite Twister connection with a Phillips screwdriver.
3. Place the Satellite Twister firmly into the open slot.
4. Use the screw of the cover to secure the Satellite Twister to the All-Round Joystick.
5. If required, place a second Satellite Twister in the same way.
6. Connect the cabling of the Satellite Twister to the All-Round Joystick.



To adjust the height of the switches:

1. Loosen the set screw on the clamp with a 2.5mm T-Handle.
2. Adjust the switch to the desired height.
3. Once in position, tighten the set screw to hold the Twister switch in place.

### CAUTION

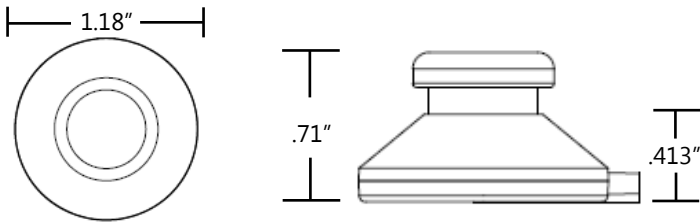
Tighten the screws firmly, but not excessively. Excessive force may damage the unit.

## Twister Dome Switch

## 9.6

Included in each Twister Dome Switch Package:

- Set 3M Dual Lock interlocking self-adhesive fasteners 25mm x 2mm (0.866in x 0.078in)
- 1 self-adhesive rubber pad 28mm x 2mm (1.102in x 0.078in)
- 2 Types of self-tapping screws delivered:
  - Diameter 2.2mm (0.087 in)  
Length 6.5mm (0.266in) for sheet thickness 0.5mm (0.02 in) to 2mm (0.079 in)
  - Diameter 2.2mm (0.087 in)  
Length 9.5mm ( 0.374in) for sheet thickness 3mm ( 0.118 in) to 4.5mm ( 0.177 in)



To replace the Twister button:

1. Feed the top of the casing from the end of the Twister cord up to the base of the Twister button. See *Figure 1*.
2. The button should rest along the top cut-out of the casing. See *Figure 2*.
3. Ensure the Twister cable is placed along the cable cutout area in the casing.
4. Align the Twister holes on the top of the dome casing with the Twister button and with the pre-drilled holes on the base of the casing.
5. Tighten and secure the casing along the base with the four provided screws. The two inner screws will hold the button in place. The 2 outer screws will secure the casing.

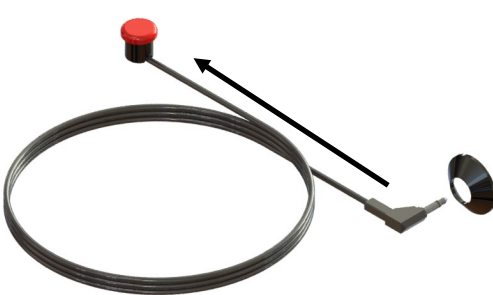


Figure 1



Figure 2

**NOTICE**

The dome switch casing cannot be replaced.

To use the interlocking self-adhesive fasteners:

1. Remove the adhesive backing on one of the self-adhesive fasteners and place on the bottom of the Dome Switch casing.
2. Remove adhesive backing on the second fastener and place adhesive side down on flat surface.
3. Place the Dome Switch casing with the fastener on top of the fastener secured to the flat surface. Press down until you hear a clicking sound indicating the fasteners are secured to each other.

To adhere the rubber pad to the Dome Switch casing:

1. Remove the adhesive backing from the rubber pad and place on the base of the Dome Switch casing.
2. Rubber pad with Dome Switch is not permanently secured to the surface. The placement can be changed when necessary.





## Operating The Twister

### 10.1

The Twister switch is a single, mechanical, normal open switch. It will activate when pressed on.

To activate your Twister, simply press anywhere on the top of the activation surface. You will feel and hear a clear and audible “click”.

## Twister Safety

### 10.2

- Do not use if the Twister handle is damaged, the top is cracked, or missing.
- Do not use if the Twister does not properly make an audible noise when applying pressure.
- Do not use if the Twister does not move when applying pressure.

## Safe Driving

### 10.3

It is mandatory to have a wheelchair power on/off switch, which immediately shuts down the wheelchair power and electronics, within easy reach of the user while driving. This allows the wheelchair to instantly stop in case of problems or an emergency.

In case the wheelchair responds in an unexpected way, the user must immediately release the power switch.

 **WARNING** The on/off switch must be available to the user at all times.

### WARNING

Make sure that cabling is mounted in such a way that excessive wear and tear is avoided.

After installation of the Twister, execute the following tests before the wheelchair is delivered or put into service:

## Check That The Twister:

**11.1**

- Is not bent or damaged.
- Housing, cabling, and all connectors are not damaged.
- Makes the audible “clicking” noise and returns back to its original position.

## Operational Test:

**11.2**

1. Activate the wheelchair operating system.
2. Check for any error message.
3. By pressing the desired switch, the programming functions should either turn off/on, or highlight through chair functions.
4. Repeat the previous steps a few times in order to confirm the switches are activating correctly.

### **WARNING**

Execute this test only on a level surface, in an open area free of obstacles.

### **CAUTION**

The wheelchair may start moving.

## Test Drive:

**11.3**

- Perform a test drive with the wheelchair.
- Check whether the wheelchair and all of its options are fully functioning in all positions the user may need with the selected joystick and Twister switch.
- Check that no cabling or parts could possibly get damaged or hindered in any possible position of the wheelchair.

## Stop Test:

**11.4**

- Drive full speed ahead and shut down the wheelchair with the power on/off switch.
- The wheelchair may not suddenly stop, but must slow down to a gradual stop.

## Dealer Assistance

### 12.1

During first time use by the client, it is advised that the dealer or service technician assists and explains the different drive configurations to the customer (the user and/or the attendant). If needed, the dealer can make final adjustments.

## User Testing

### 12.2

It is important that the customer is fully aware of the installation, how to use it, 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.
- Is the joystick and the switch within easy reach?
- Can the user safely operate the wheelchair with minimal effort?
- Is the placement of the joystick with the attached switch available in an optimal position for the user?

If needed, adjust the Joystick to the proper position so the Twister is in a better position for the client to operate.

Explain to the customer possible problems and how to address them.

## Conditions Of Use

### 12.3

The Twister 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 usage conditions change significantly, please contact your dealer or a qualified service technician to avoid excessive wear and tear or unintended damage.

## Cleaning

### 13.1

To keep the Twister functioning properly:

- Disconnect Twister and wipe clean with a damp cloth.
- Use only non-aggressive disinfectant cleaning agents. Cleaning solutions that contain bleach, ammonia, chlorine, etc. should not be used. (Dish washing cleaners are acceptable.)
- Never immerse the Twister in water or cleaning solution.

 **WARNING** Do not pull or wrap the cable around the Twister.

 **WARNING**

Do not attempt to open or disassemble the Twister enclosure.

## Monthly

### 13.2

Monthly or when needed, check whether:

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









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