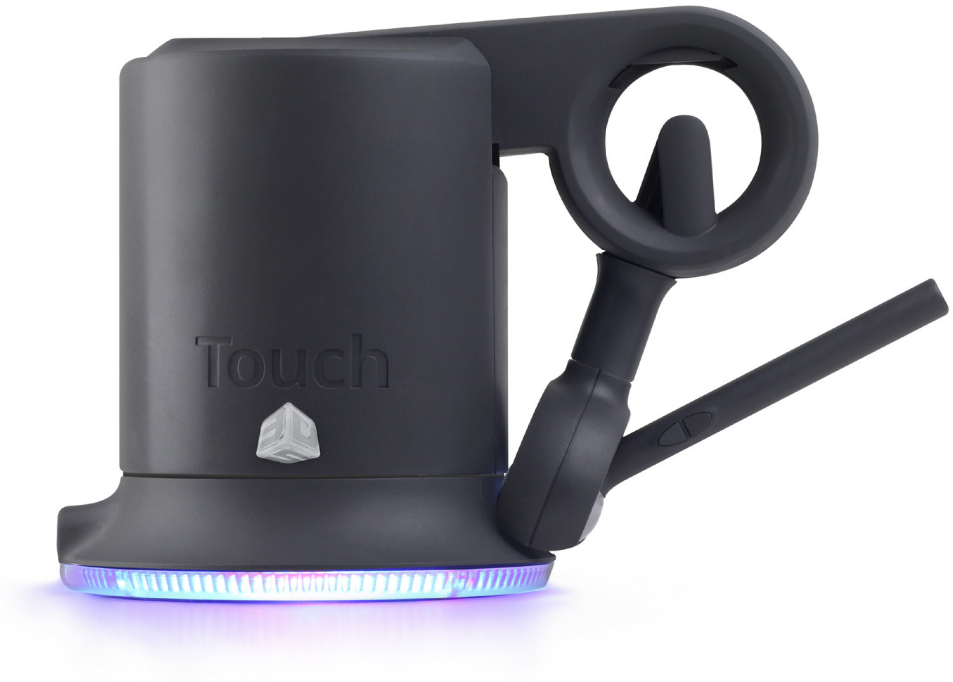
Touch™

3D stylus

Hands on design



User Guide

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FCC NOTICE

This equipment has been tested and found to comply with the limits for a class “B” digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

COMPLIANCE

This equipment conforms with International Electric Committee (IEC) 60950-1, EN 55022, EN55024, EN 61000-3-2, EN 61000-3-3, and EN 60950 and meets the requirements of the applicable EC directives.

WARRANTY

No warranties of any kind are created or extended by this publication. 3D Systems warrants that the Touch haptic device will be free from defects in materials and workmanship, during the applicable warranty period, when used under the normal conditions described in the documentation provided to you, including the respective User Guide. 3D Systems will promptly repair or replace the Touch, if required, to make it free of defects during the warranty period. This warranty excludes repairs required during the warranty period because of abnormal use or conditions (such as riots, floods, misuse, neglect or improper service by anyone except 3D Systems or its authorized service provider). The warranty period for the Touch is twelve (12) months and shall start the date Your device is purchased. For consumers who are covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by our standard warranty are in addition to, and operate concurrently with, all rights and remedies conveyed by such consumer protection laws and regulations, including but not limited to these additional rights.

THIS WARRANTY IS THE ONLY WARRANTY PROVIDED FOR THE TOUCH 3D DEVICE. TO THE MAXIMUM EXTENT PERMITTED BY LAW, 3D SYSTEMS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES FOR THE TOUCH 3D DEVICE AND EACH OF ITS COMPONENTS, WHETHER THOSE WARRANTIES ARE EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR INTENDED OR PARTICULAR PURPOSES.

LIMITATION OF LIABILITY

3D SYSTEMS WILL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, EXEMPLARY OR INCIDENTAL DAMAGES (SUCH AS LOSS OF PROFIT OR EMPLOYEE’S TIME) REGARDLESS OF THE REASON. IN NO EVENT SHALL THE LIABILITY AND/OR OBLIGATIONS OF 3D SYSTEMS ARISING OUT OF THE PURCHASE, LEASE, LICENSE AND/OR USE OF THE EQUIPMENT BY YOU OR OTHERS EXCEED THE PURCHASE PRICE OF THE TOUCH 3D DEVICE.

1 INTRODUCTION

The Touch 3D stylus is the first-ever haptic consumer 3D stylus for intuitive 3D sculpting and design, with instant force feedback that mimics the sense of physical touch. Touch works with 3Ds' Cubify Sculpt and Geomagic Sculpt, powerful virtual sculpting tools that transforms 3D modeling from a complex, skills-centric design experience to a simple, easy sculpting delight for students, designers, and hobbyists alike.

The Touch 3D stylus features, include:

- Ergonomic design and compact footprint
- 6-degree-of-freedom positional sensing
- 3-degree-of-freedom force feedback
- Two integrated momentary stylus switches
- Magnetic stylus-docking inkwell
- USB 2.0 full-speed interface plug-n-play
- Made of metal components and injection-molded plastics
- Instructional LEDs in base and gimbal

2 SAFETY

WARNING: INDICATES SOMETHING MAY HAPPEN THAT COULD CAUSE LOSS OF DATA, DAMAGE TO EQUIPMENT, OR COULD CAUSE PERSONAL INJURY.

SAFETY GUIDELINES

- Follow all safety rules in this section and observe all cautions and warnings in this guide.
- Hardware usage guidelines are provided to assist you in protecting the effectiveness and life of the device. They are not intended as recommendations for the prevention of repetitive stress injury, carpal tunnel syndrome or any other conditions, injuries or disorders; users should consult their own physicians. By using the Touch device, you acknowledge and agree that 3D Systems shall have no liability for any disorder, condition or injury arising from any use of the device.
- Do not open the Touch device. Attempting to open or repair the device by anyone other than a certified authorized service center voids the manufacturer warranty and hardware maintenance contract. There are no serviceable components in the Touch device or power supply. Return to 3D for servicing.

3 TOUCH SETUP

In this section you will setup the Touch device and plug in the cables.

WHAT'S INCLUDED

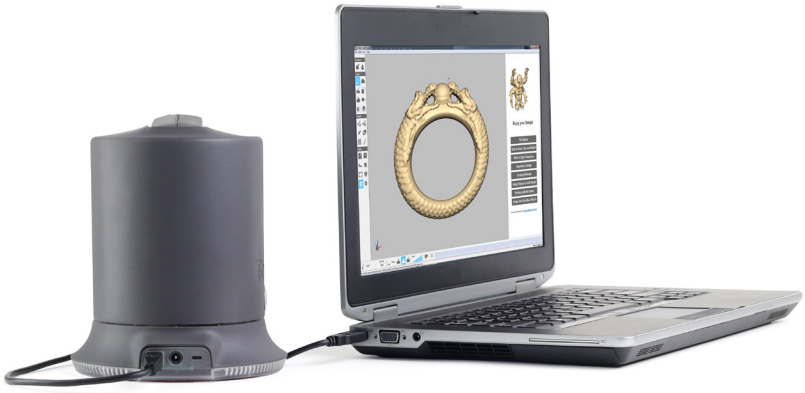
Included in the box:

- Touch 3D stylus
- Power cord
- Power supply
- USB cable
- Quick Start Guide

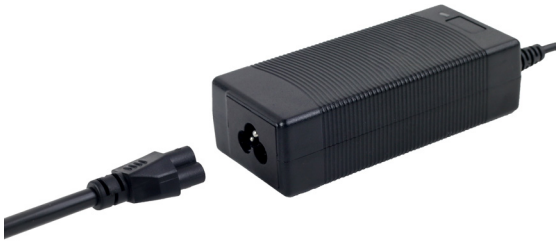
CONNECT THE TOUCH

1. Carefully remove the **Touch** and **cables** from the box.
2. Position the Touch device in your workspace, using both hands to grasp the base of the device.

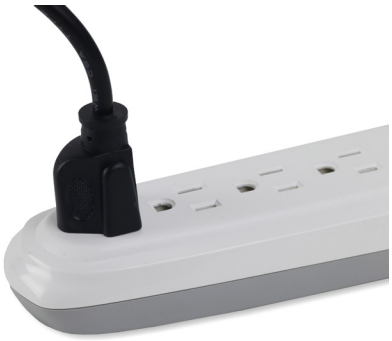
   NOTE: See "Handling the Touch Device" on page 9 **for instructions on how to handle the device to reduce the risk of damage.**
3. Insert the smaller end of the **USB cable** into the Touch device, then connect the larger end of the USB cable into the USB port on your computer.



4. Plug the **power cord** into the **power supply**.



5. Plug the **power cord** into an available **outlet** (for 110V the outlet must be rated for at least 2 Amps, for 220V: 1 Amp). The Green status light on the power supply indicates that it is working correctly.

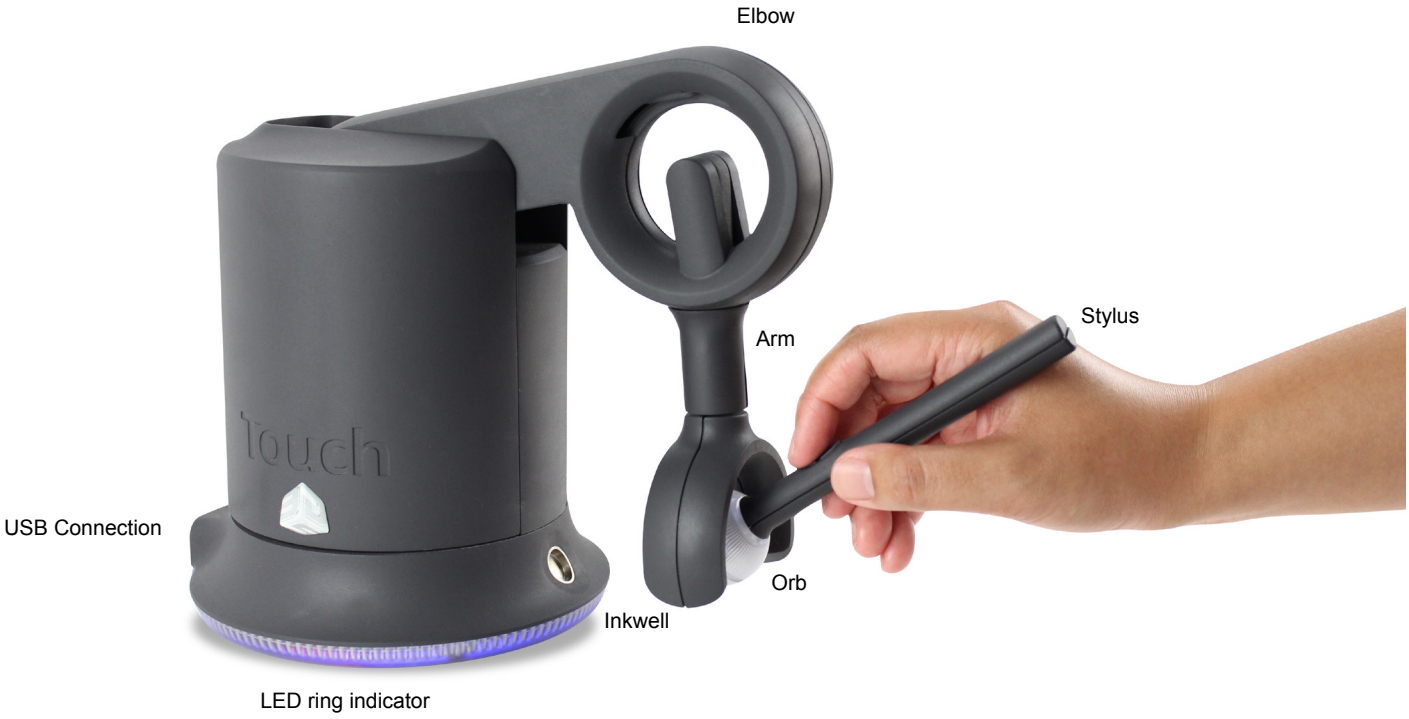


6. Plug the **power supply connector** into the **back of the Touch** device.

7. Make sure that the **LEDs ring** at the base is lit **Blue.** Blue indicates the Touch has power. If it is not, check all of the connections. If the problem continues, contact 3D Systems customer support.

TOUCH COMPONENTS

The picture below labels the parts of the Touch device.



LED (LIGHT) RING INDICATORS

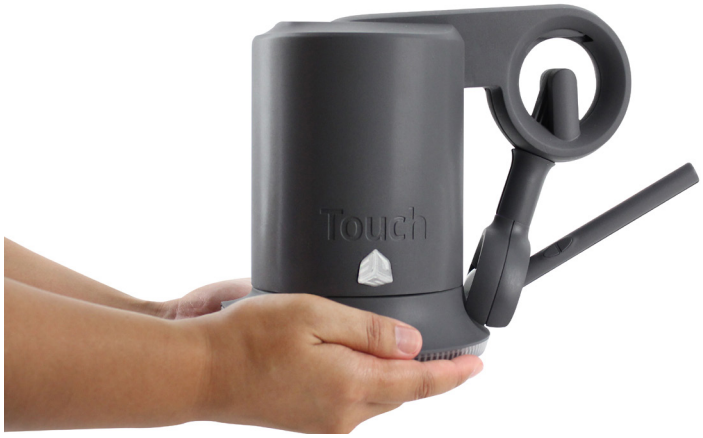
The LED ring at the base of the Touch will display a different color light depending on the status of the Touch.

- Blue - indicates that the power is on
- White - indicates that the Touch is calibrated or the stylus is sitting in the inkwell
- Green - indicates that the stylus is out of the inkwell and is active within an application

HANDLING THE TOUCH DEVICE

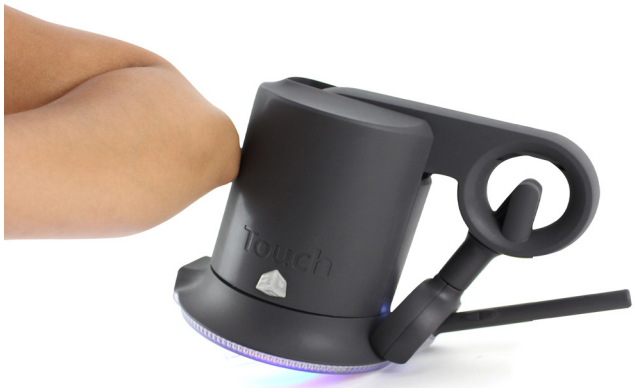
WARNING: LIFTING THE TOUCH DEVICE IMPROPERLY MAY DAMAGE IT. TO REDUCE THE RISK OF DAMAGE, PLEASE FOLLOW THE INSTRUCTIONS BELOW.

Lifting the device: To properly lift the device grasp the base of the Touch unit on both sides and lift as shown in the image below. DO NOT lift by grabbing the stylus or arm. Lifting the unit by the stylus or arm could result in severe damage to the device.



Position hands to securely lift the device.

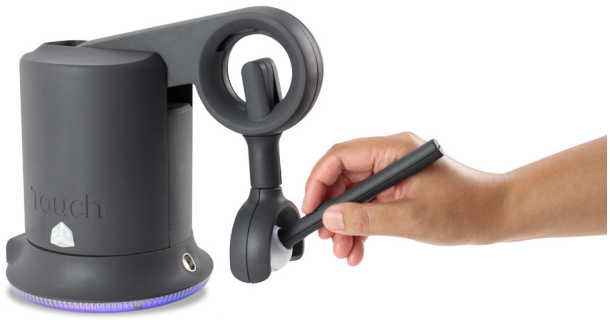
Protecting the device from damage: It is best to place the device firmly on the desktop and away from edges to reduce the risk of damage from a direct, unintentional elbow hit.



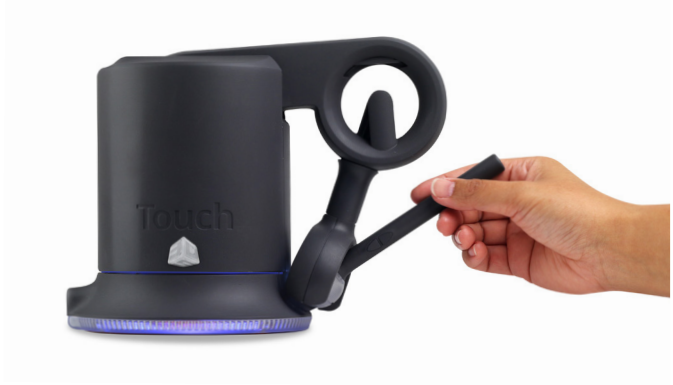
To reduce the risk of damage, keep the device out of the way. Pay extra attention if the stylus is stored in the inkwell.

HANDLING THE STYLUS

The correct way to hold the stylus: Grasp the stylus as you would a pen or pencil. Holding the stylus at the bottom, closer to the orb.

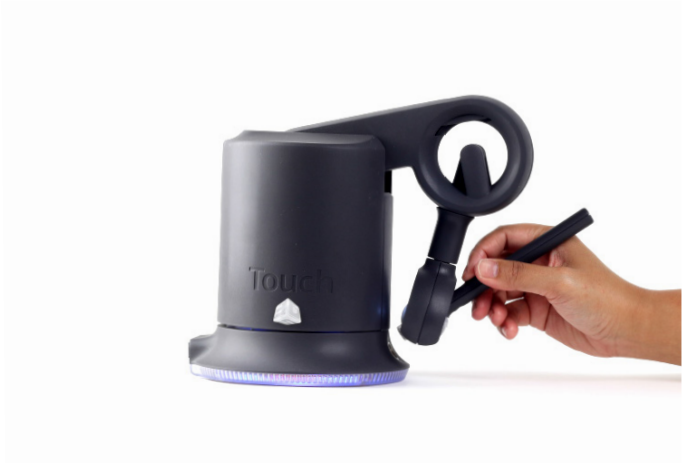


Proper Handling

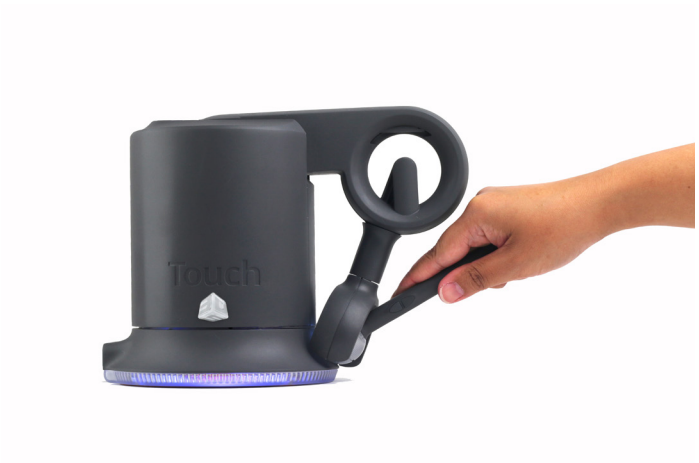


Improper Handling

Lifting the stylus out of the inkwell: Grasp the stylus and lift up to disengage as shown below in the image on the left. Do NOT attempt to pull the stylus straight out as shown on the right.



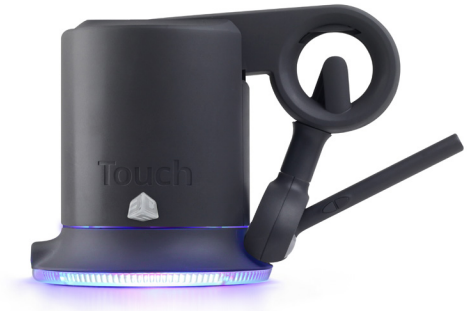
Proper Handling

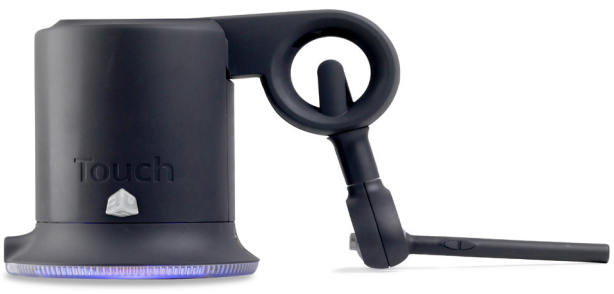


Improper Handling

Calibrating the device: The Touch may need to be recalibrated from time to time, particularly if it has lost power or has been moved. To calibrate the device, place the stylus in the inkwell and start your application. The LED ring at the base of the Touch device will be lit White when the device is properly calibrated.

Storing the stylus: After the device is calibrated, the stylus may be kept in the inkwell or left resting on the desk. Storing the stylus in the inkwell might increase the risk that the device will be knocked over or that the stylus will be damaged.





The stylus does not need to be stored in the inkwell.

POSITIONING THE TOUCH DEVICE

The correct placement of the device will vary from one user to another. You may want to experiment to find a placement that feels right for you.

- The device should be positioned so that you are comfortable when working with it.
- You should not feel any strain on your wrist or forearm when working with the device.
- If you are left-handed, you may find it easier to work with the Touch placed to the left of the keyboard.
- Remember to take breaks often to stretch your hands, wrists, and elbows.

6 USING THE TOUCH DEVICE

This section introduces you to working with the Touch device and the physical limits of the device's range of motion. It is important to understand these physical limitations so that you do not inadvertently damage the device by forcing it past its designed limits.

WORKING IN 3D SPACE

We have become so accustomed to using a mouse to move around a computer screen that we don't think twice as we move our hand around a desk to move the cursor. But there was a time not long ago when this simple task was not second nature; some even found it challenging and were often frustrated as they learned. If you are new to working with a haptic and in a 3D digital space, it may take some time to feel comfortable. Understanding where objects are in 3D space may take some practice before you are able to move and manipulate objects with ease and certainty. Be patient with yourself.

PHYSICAL LIMITS OF THE DEVICE

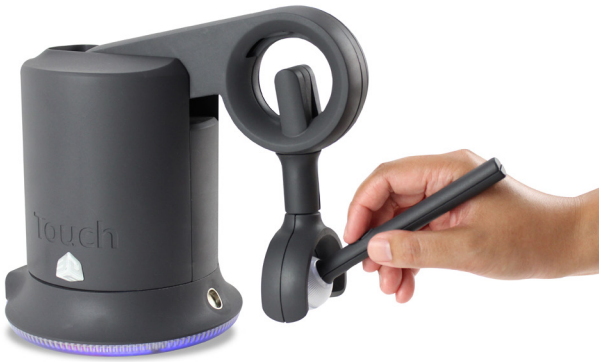
The Touch device has physical limits. When you reach one of these limits you will feel a sudden stop; this is the mechanical stop designed into the device. Forcing the Touch past any of these stops will damage the device.

Take some time to become more familiar with the stops of the Touch before using the device by moving the device through its full range of motion.

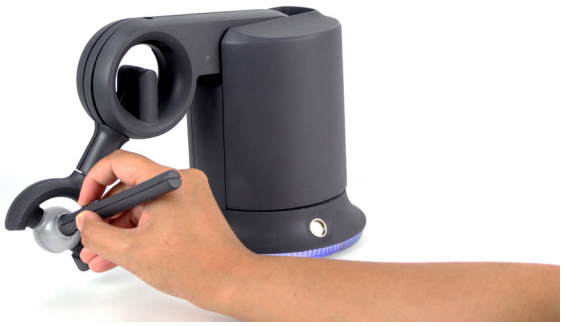
MOVING WITH THE STYLUS

Using the steps below and the accompanying images, try moving the stylus through the different range of motions.

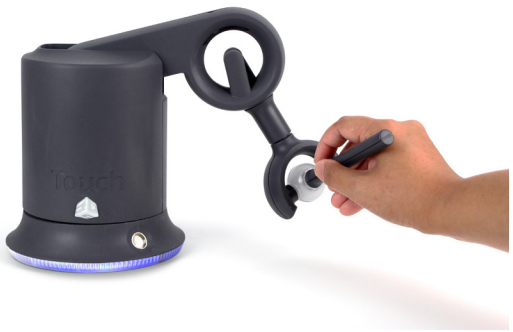
1. Hold the **stylus** as you would a pencil or pen, with the free end (the end not connected to the device) of the stylus (the eraser end of a pencil) pointing towards you.



2. Gently move the stylus to the left and then to the right.

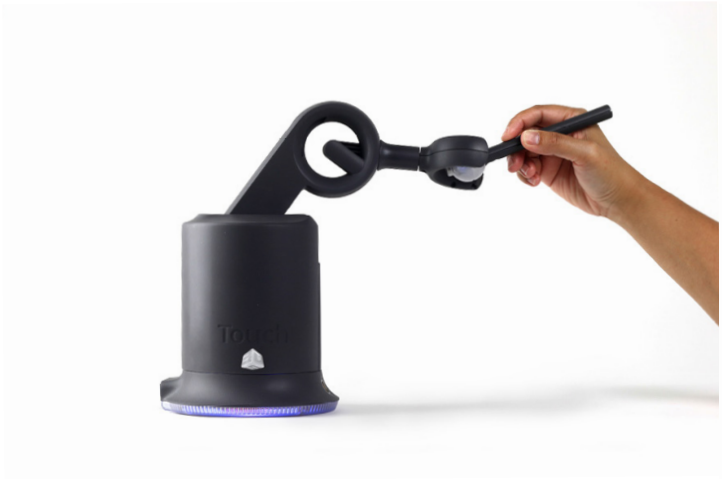


Move the stylus to the right.

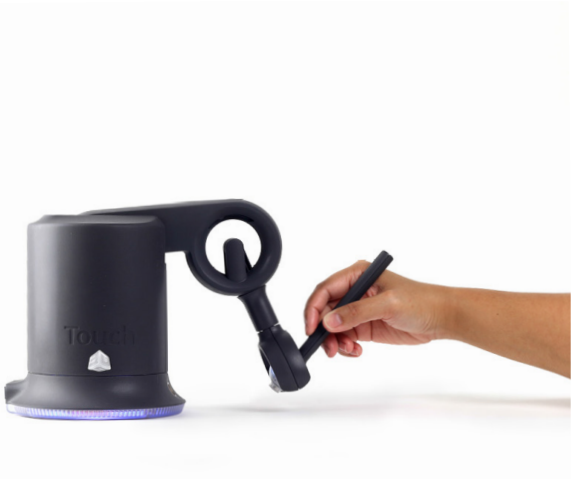


Move the stylus to the left.

3. Move the stylus up and down.

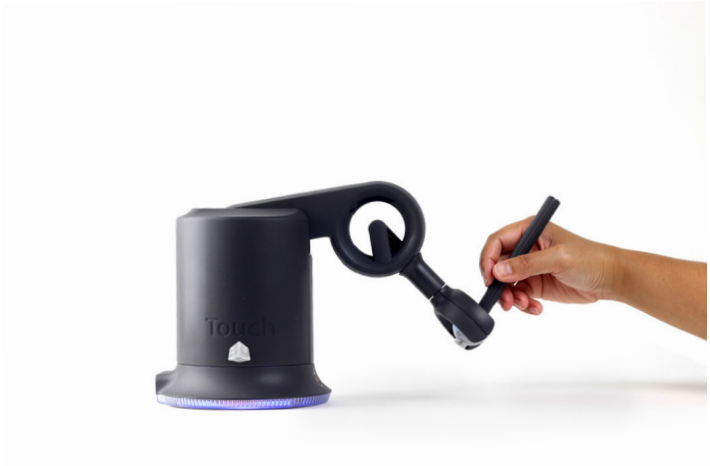


Move the stylus up.

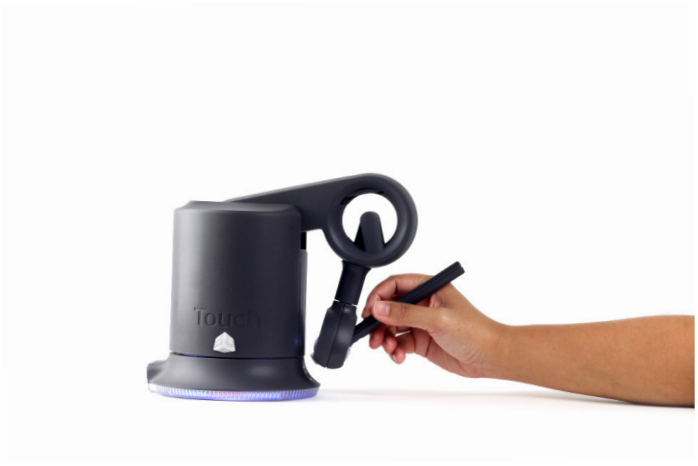


Move the stylus down.

4. Move the stylus towards the device and then away from the device.



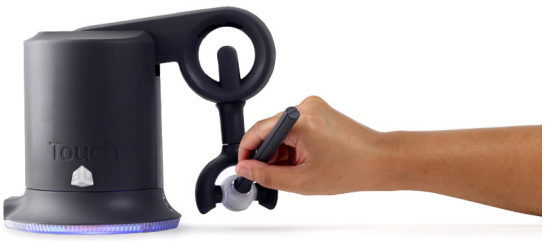
Move the stylus away from the device.



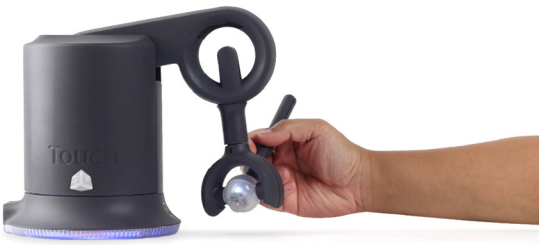
Move the stylus towards the device.

NOTE: When you reach a physical limit, you'll feel one of the device's mechanical stops. Don't force the device past any of these stops.

5. Next, perform smaller movements from the orb, moving your wrist:
   a. Rotate the stylus left and right.

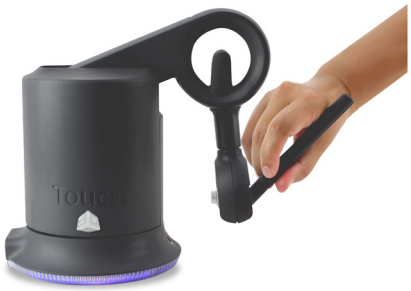


Using your wrist, rotate the stylus to the left.

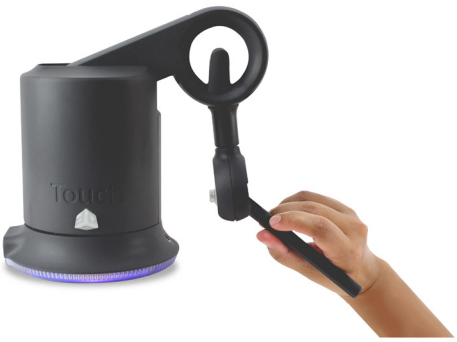


Using your wrist, rotate the stylus to the right.

b. Next pivot the stylus up and down.

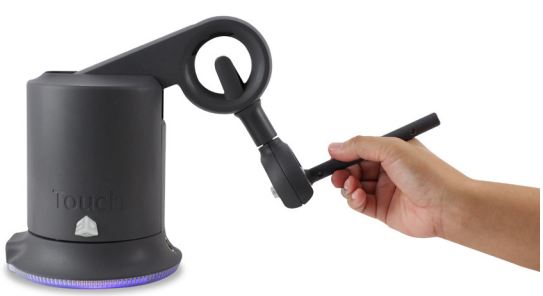


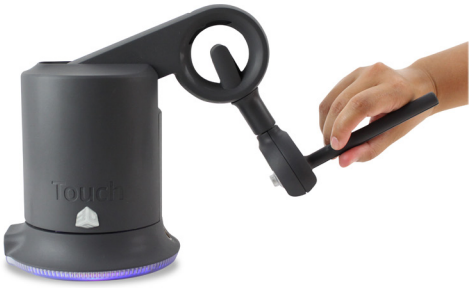
From the wrist, pivot the stylus up.



From the wrist, pivot the stylus down.

c. Finally gently twist the stylus back and forth.





From the wrist, twist the stylus.

Now you should have an understanding of the range of motion of the Touch device and where its limits are.

WARNING: ALWAYS WORK WITH THE CONNECTED END OF THE STYLUS POINTING AWAY FROM YOU. NEVER ROTATE THE STYLUS WITH THE POINT FACING YOU.

REGISTER YOUR TOUCH DEVICE

You need to create an account and then log in to Cubify.com to activate the Touch 3D stylus.

1. Go to www.Cubify.com/Touch.
2. Click **My Cubify**, and then click Sign up.
3. Fill out the required information and click **Sign Up**.

   The Activate your Touch 3D stylus window appears.
4. Enter the **serial number** of your Touch 3D stylus, then click **Activate**.

   You will receive an activation code that you need to enter into your software to activate and start using.

Depending on which 3D software you purchased, follow the appropriate instructions below to register and activate your 3D software.

REGISTER, ACTIVATE AND START USING CUBIFY SCULPT

If you are using 3D's Cubify Sculpt application to create your designs with the Touch device, you must register and activate the software for the Touch device to recognize the software.

1. **Download** and **install** the Cubify Sculpt application.

   You will receive a prompt to register the 3D software.
2. **Register** the Cubify Sculpt software through the Cubify website: www.Cubify.com/Sculpt
3. Enter the **activation code** (you received after registering your Touch device) in the Cubify Sculpt installer window.

   You're now ready to begin using the Touch device and the 3D software.

   When Cubify Sculpt launches, the Touch automatically recognizes the application. The Touch LED ring should display White.

   NOTE: For instructions on correctly connecting the Touch, see "Connect the Touch" on page 6**.**
4. From Cubify Sculpt, select a shape in the **New Model** dialog, then click **OK**.
5. Use the Touch and the options in Cubify Sculpt to create and draw your design.

   NOTE: See the Workflow window (tutorial) that's included with the Cubify Sculpt application for information on how to use the software and create a design.

REGISTER, ACTIVATE AND START USING GEOMAGIC SCULPT

If you are using 3D's Geomagic Sculpt application to create your designs with the Touch device, you must register and activate the software for the Touch device to recognize the software.

1. **Download** and **install** the Geomagic Sculpt application.
2. **Start** the application.

   The License Utility window opens. The License Utility allows you to license and use your product. When you launch the License Utility, click the Help button to read the Licensing Guide.
3. Follow the instructions to activate your product in the License Utility.

   You're now ready to begin using the Touch device and the 3D software.

   When Geomagic Sculpt launches, the Touch automatically recognizes the application. The Touch LED ring should display White.

   NOTE: For instructions on correctly connecting the Touch, see "Connect the Touch" on page 6**.**
4. From Geomagic Sculpt, select **File > New**, and then select a shape in the **New Model** dialog, then click **OK**.
5. Use the Touch and the options in Geomagic Sculpt to create and draw your design.

   NOTE: See the *Geomagic Sculpt Training Guide* (tutorial) for information on how to use the software and create a design.

8 FEATURES AND SPECIFICATIONS

Specification	Value
Supported operating systems	Windows 7® (32-bit or 64-bit) Windows 8® (32-bit or 64-bit)
Power consumption	100/240V 50/60 Hz 1 Amps (output DC 18V 2.2 A so 38 Watts max)
Workspace dimensions	10.45 x 9.5 x 3.5 in
Hardware recommendations	
• Intel Pentium or equivalent processor	• 2 GHz or faster
• RAM	• 2 GB minimum
• Screen resolution	• 1280 x 1024 minimum
• Color	• 32-bit
• Available hard disk space	• 4 GB
Height	7” (arm at rest)
Base diameter	5.5” (round base)
Range of Motion	Hand motion pivoting at wrist
Nominal position resolution	Approx 0.084 mm
Max force (neutral position: when 4-bar links are orthogonal)	3.4 N
Force feedback	3° of freedom X, Y and Z
6-degree-of-freedom positional sensing	6° of freedom X, Y & Z (Digital Encoders) Roll, Pitch & Yaw (± 5% linearity potentiometers)
Interface	USB 2.0
USB cable length	6”

3D Systems, Inc.
333 Three D Systems Circle | Rock Hill, SC | 29730
www.3dsystems.com

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