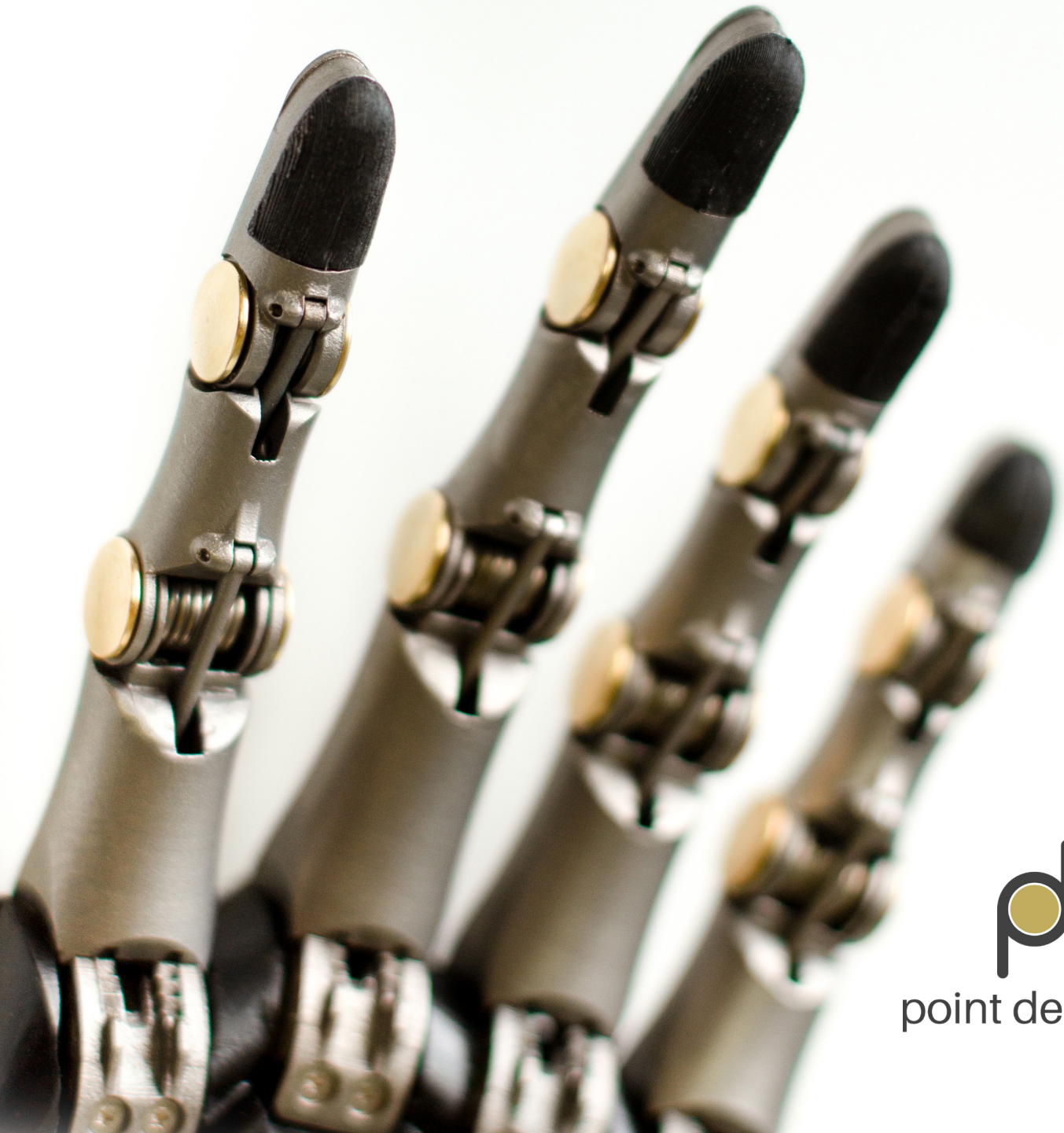
Point Digit II

Installation Guide for the Prosthetist



point designs

This document provides information for the prosthetists who will be installing the Point Digit II.

Refer to **www.pointdesignsllc.com/documentation** to ensure you have the latest copy of this document.

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EC REP

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Rx ONLY

Caution: Federal law restricts this device to sale by or on the order of a prosthetist.

This symbol is used throughout the guide to indicate important cautionary information. Text following this symbol should be read carefully.

Point Digit II

INSTALLATION AND SETUP GUIDE FOR THE PROSTHETIST

Thank you for choosing the Point Digit II and providing your client with an effective and robust prosthetic finger solution.

Whether you are retrofitting the Point Digit II into an existing prosthetic socket or you are building a new prosthesis from the ground up, this guide will familiarize you with the Point Digit II's functionality and installation.

The installation of any Point Digit II should be performed exclusively by a licensed prosthetist or technician. Point Digits are intended to be operated by a prosthesis user following installation and setup. Any unauthorized handling or installation of a Point Digit II could void their warranty.

Any questions? We are always happy to help.
Call us or send us an e-mail.

(720) 600-4753
support@pointdesignsllc.com

Table of Contents

Introduction to the Point Digit II

*Images not to scale, lateral grip pads are not preinstalled

The **Point Digit II** is a passive (i.e. not powered) mechanical finger for people with partial hand amputation. It features a ratcheting mechanism that enables one-handed use and 11 distinct locking positions. The Point Digit II features integrated compliant touchscreen compatible* fingertip pads for enhanced grip. The **Point Digit II** is made from titanium for ample strength.

The **Point Digit II** can be flexed and locked by applying a force to the dorsal side of the fingertip. This force can be applied by the contralateral limb or by an opposing surface (e.g., leg, table, desk, wall, chair, etc.).

The **Point Digit II** can be extended in one of two ways:

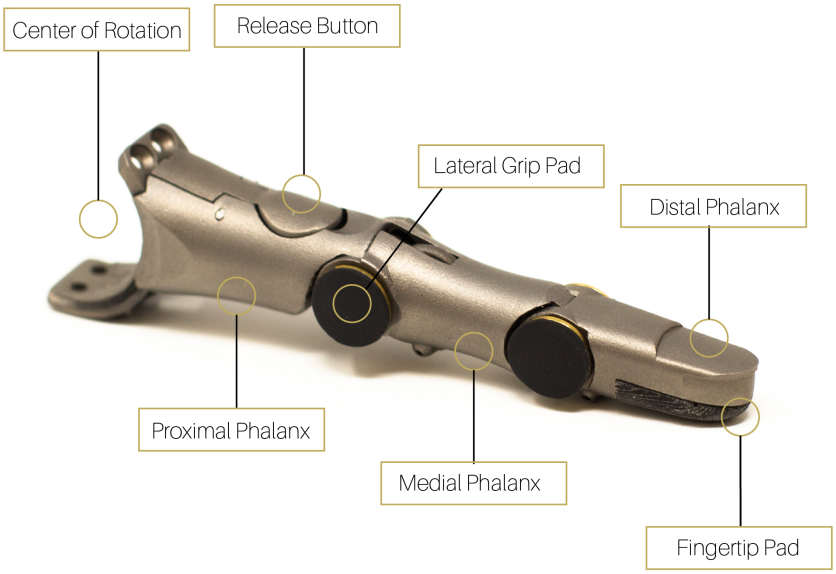
1) depressing the push button, or
2) fully flexing the finger to engage the auto spring-back feature.

Up to 4 **Point Digit IIs** can be integrated into a prosthetic socket using the mounting kit, which includes a mounting bracket, lamination spacers, and mounting hardware.

**Touchscreen compatibility is not guaranteed, but has been tested on common iOS, Android, and Windows devices using standard socket material (silicone inner liner with carbon fiber outer shell)*

Component description

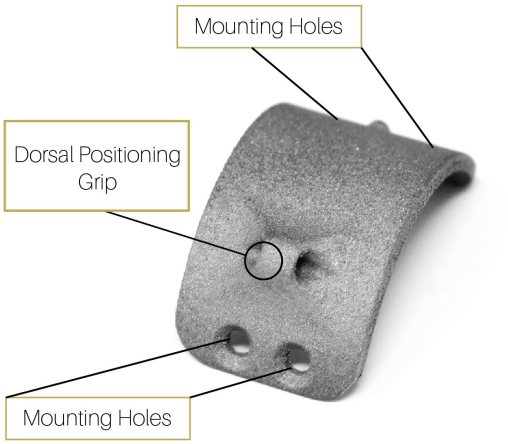
THE POINT DIGIT II



The **Point Digit II** comes assembled as one unit. The **Point Digit II** is comprised of a curved knuckle track, proximal phalanx, medial phalanx, distal phalanx, a release button, fingertip pads, lateral grip pads and several other internal parts. The curved knuckle track has 4 mounting holes.

LAMINATION SPACERS

The lamination spacers are curved components with mounting holes and a dorsal positioning grip to help maintain mounting hole alignment and structural rigidity during the lamination process, and prevent resin from seeping into the mounting area or mounting holes.



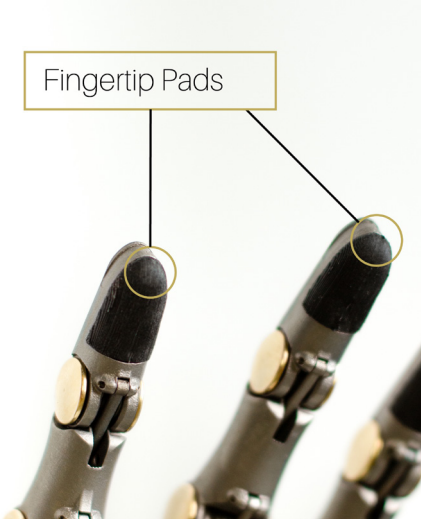
MOUNTING SCREWS

Torx® mounting screws (M2 x 5 mm) are provided for attaching the lamination spacers to the bracket during the lamination process and for mounting the fingers to the bracket. 8 screws per finger are supplied with each *Point Digit II*.

Component description

FINGERTIP PADS

The **Point Digit II** features integrated compliant touchscreen compatible* fingertip pads for enhanced grip. Each Point Digit II comes with one preinstalled fingertip pad, 5 replacement pads, and an installation tool. Additional replacement pads can be acquired by contacting **support@pointdesignsllc.com**

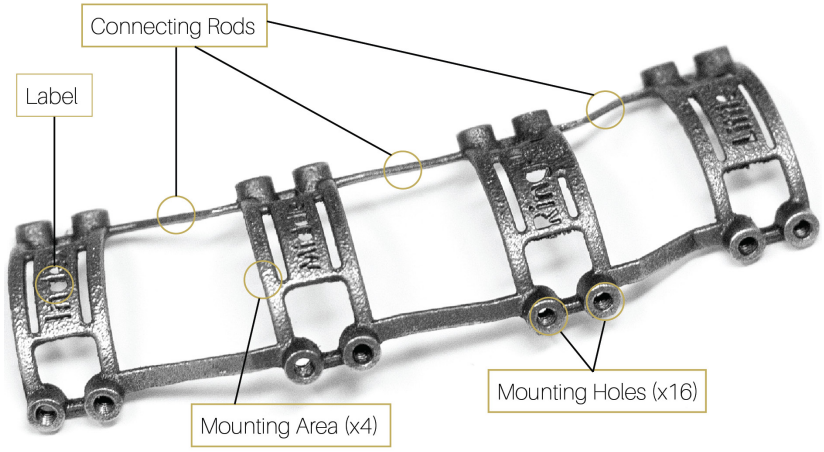


LATERAL GRIP PADS

The Point Digit II comes with lateral grip pads to be installed after socket fabrication and final digit mounting. The lateral grip pads are intended for the index finger joints to improve lateral grip, but can be applied to any digit. Ten lateral grip pads and several surface preparatory wipes are included with each order.

**Touchscreen compatibility is not guaranteed, but has been tested on common iOS, Android, and Windows devices using standard socket material (silicone inner liner with carbon fiber outer shell)*

MOUNTING BRACKET



The mounting bracket is a single part comprised of 4 mounting areas with **labels**, 16 mounting holes (4 per mounting area), and **connecting rods** that tie the mounting areas together.

The **labels** denote Point Digit II locations and are index, middle, ring, and little.

The **connecting rods** are cut prior to installation to retain only the mounting areas needed.

for example for an index and middle finger installation, the connecting rods between the middle and ring mounting areas are cut and filed down to retain only the index and middle mounting areas.

The mounting bracket comes in either a left-handed or a right-handed version denoted by the Ring finger label, i.e., Ring-R (for right) or Ring-L (for left).

Specifications

Material	*Titanium*
Expected service life	*2 years*
Rated pinch grip strength	*667 N (150 lbf)*
Rated hook grip strength	*667 N (150 lbf)*
Rated tear out strength	*1334 N (300 lbf)*

Installation

BEFORE YOU BEGIN

Included in the package:

- Up to four (4) **Point Digit II**(s)
- One (1) mounting bracket
- Up to four (4) lamination spacer(s) [one (1) per **Point Digit II**]
- Up to thirty-two (32) mounting screws [four (4) per **Point Digit II** and four (4) spare per digit]
- Up to twenty-four (24) fingertip pads, [one (1) per **Point Digit II** and five (5) spare per digit]
- Fingertip Installation Tool
- Ten (10) lateral grip pads, uninstalled
- Surface preparatory alcohol wipe
- Torx® tool size T6

What you will need:

- Prefabricated patient socket (e.g., carbon fiber & silicone)
- Lamination supplies (e.g., prepreg carbon fiber, adhesive, silicone, etc.)
- Lamination tools (dremel®, files, PVA bag, etc.)
- Blue thread locker (Loctite® Blue 242® or similar)

The following installation instructions assume that the plaster model of the amputated partial hand has been prepared with a custom silicone socket and a thin carbon fiber prepreg shell, and that a prepreg carbon fiber lamination process will be used to install the **Point Digit II** system.
The **Point Digit II** installation principles presented in this document can be applied to differing socket lamination and fabrication techniques.

POSITIONING

Take care not to lose any of the mounting hardware.

1. Begin by cutting and filing down the mounting bracket to retain only the mounting locations needed for the installation.
2. Align the bracket with fingers attached for best position on the carbon shell.
3. Mount the fingers to the mounting bracket using the supplied mounting hardware and Torx® tool.

Ensure that the unlock feature in full flexion can be achieved. In other words, the fingers must not be pre-flexed to a point where the finger tips will contact the palm before the unlock is achieved.

4. Use your preferred adhesive to tack the mounting bracket into position, then remove the fingers using the Torx® tool.

5. Apply additional adhesive to create a secure bond of the mounting bracket.

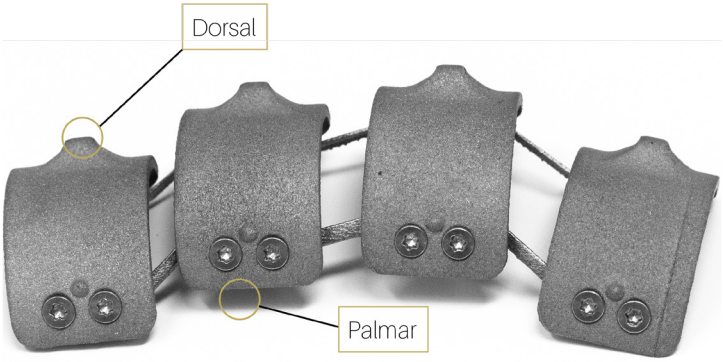
Use only enough adhesive to ensure a secure fixation of the bracket. Voids will be filled with prepreg carbon fiber in a later step.

POSITIONING

6. Remount the fingers using the supplied mounting hardware and the Torx® tool. Inspect the clearance around the finger mount, considering that there will be some layers of prepreg carbon fiber added later. Remove fingers.

LAMINATION

1. Mount lamination spacers using the supplied mounting hardware and the Torx® tool.



2. Check clearance between the lamination spacers and the adhesive.

3. Shape adhesive with dremel® (or similar) as needed.

4. Remove lamination spacers.

5. Pack carbon prepreg ***under*** the mounting bracket to fill any voids.

6. Add carbon prepreg to fill the area over the bracket up to the height of the threaded mounts.

7. Add carbon prepreg over entire model excluding the threaded mount faces.

Be careful not to obstruct the mounting holes with carbon or resin.

8. Apply a very thin layer of non-curing silicone to the underside of the lamination spacer so it will form to the prepreg and apply pressure.
9. Fill threaded mounting holes with silicone grease to ease later removal of screws by preventing prepreg epoxy from flowing into threads.
10. Reapply lamination spacers using supplied mounting hardware and the Torx® tool.

Lamination spacer appearance may vary. They may be metal as on page 11 or white plastic as shown here.

11. Remove excess silicone that is pressed out during reapplication of lamination spacers.
12. Apply more silicone putty to blend lamination spacers to the model.
13. Fill over mounting screws with silicone.

14. Apply a PVA bag under the prepreg shell.
15. Apply a second PVA bag over the entire model.
16. Apply vacuum.

17. After curing is complete and the model has cool, clean up the prepreg and remove the lamination spacers.

18. Mount the Point Digit II(s) using the mounting hardware provided and the Torx® tool. Inspect the Point Digit II(s) for proper function. When satisfied with function, apply blue thread locker to each mounting screw.

PRE-FITTING FUNCTION CHECKLIST

The prosthetist should ensure that all the following functions are checked prior to fitting the user with the prosthesis.
If any of the functions are not working properly, please either review the installation instructions and/or contact **support@pointdesignsllc.com**

- ☐ Each **Point Digit II** flexes and locks into 11 distinct levels of flexion (including full extension).
- ☐ The button on each **Point Digit II** can be pressed easily
- ☐ The button rebounds to a flush position when released
- ☐ Pressing the button while each **Point Digit II** is in a flexed position causes position release and easy extension
- ☐ Full flexion of each **Point Digit II** can be achieved
- ☐ Release of each **Point Digit II** after full flexion results in spring back to full extension and ratchet mechanism reset.

FINGERTIP PAD INSTALLATION

The Fingertip Pad will have either 2 holes (for 95 mm-105 mm digits) or 1 hole (for 80 mm-90 mm digits), and the distal phalange of the **Point Digit II** will have a corresponding number of posts.

Point Digit II

Installation Tool

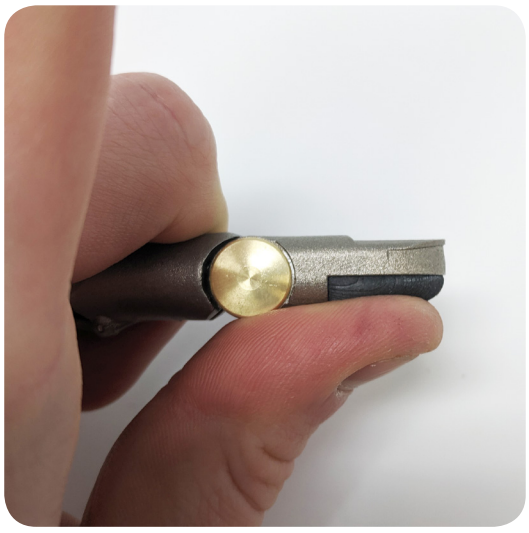
Fingertip Pad

The 2 hole pads are larger than the 1 hole pads, so make sure you have the correct pad for the distal phalange you are working with.

1. Press the pad down onto the post(s) so that they seat into the holes in the pad. Start by pressing on the proximal end of the pad and work your way distal. Maintain pressure on top of the pad as you move to Step 2.

2. With the pad mostly seated onto the post(s), use the Installation Tool to press the edges of the pad under the lip of the distal phalange. Start this process at the proximal end and then work your way distal. Make sure to maintain pressure on the top of the pad during this process.

3. With the edges pressed in, apply pressure to the top of the pad and rock back and forth gently to help make sure the pad is fully seated. If the pad looks to be bulging out still, then repeat Step 2.

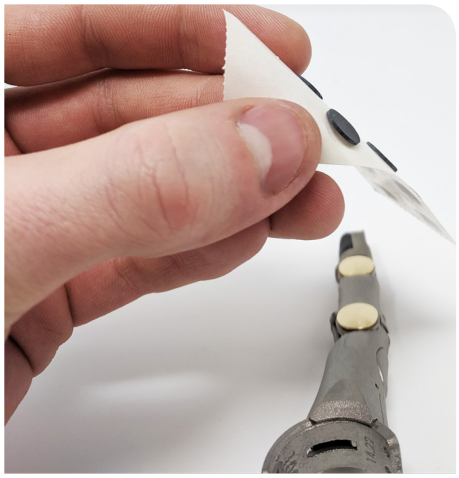


LATERAL GRIP PAD INSTALLATION

The Lateral Grip Pads come in a pack of 10 adhered to a polymer liner. Only 2 pads are needed as they are only installed on the lateral side of an index finger.

1. Clean both brass Chicago Bolts with the alcohol wipe (included).

2. Remove the Lateral Grip Pad from the backing

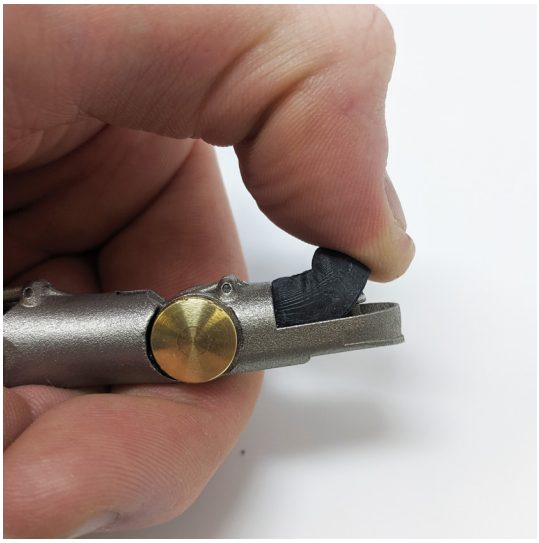


3. Center over the joint, then press on to the Chicago Bolt and hold pressure for at least 10-20 seconds. Clamping the pad down for 72hrs will yield optimal results, but is not necessary.

FINGERTIP PAD REMOVAL

1. Use the Installation Tool (or any similar tool such as a flat head screwdriver) to slide between the pad and wall of the distal phalange and pry the pad up.

2. With the pad partially pried up, use your fingers to grab the pad and pull it the rest of the way out.



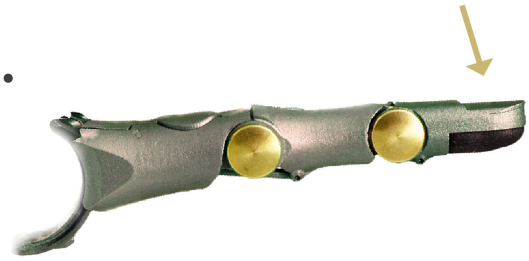
LATERAL GRIP PAD REMOVAL

1. Peel the pad off of the Chicago Bolt using your fingernail or any appropriate tool.

Using The Point Digit II

POSITIONING / FLEXION

1.



Push on finger to desired degree of flexion.

2.

RELEASE / EXTENSION

There are two methods for extending the finger from a locked flexion position,
1) the manual release button, and
2) the auto spring-back function.

1. MANUAL RELEASE

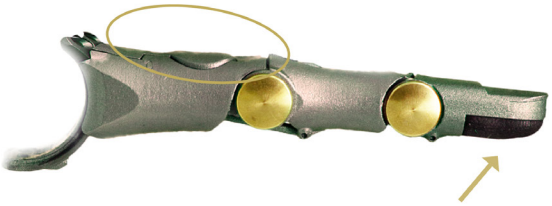
3.

4.

2. SPRING BACK

1. Fully flex finger

2. Release



If button doesn't reset, apply force in extension

Troubleshooting

In case of a problem, this section is intended to help you troubleshoot the operation of the Point Digit II.

We have included a few possible issues with solutions below. If your issue is not addressed, email us for support at ***support@pointdesignsllc.com.***

The Point Digit II moves freely and does not lock into position

OR

Cannot press Point Digit II button or button is stuck in depressed position

Most likely, the ratcheting mechanism has not been reset after the auto spring-back feature was activated. To resolve this issue, apply a force to the fingertip in extension until the finger "clicks", resetting the ratchet mechanism.

Point Digit II does not flex all of the way

Clean curved knuckle track of debris using a clean cloth, mild detergent, or compressed air. If problem persists, contact us for support.

Point Digit II is loose or came off mounting bracket

Make sure thread locker has been applied to Torx screws, and then tighten them. If Torx screws are unable to be tightened, contact us for additional support.

Point Digit II is corroded.

Contact us for support.

Maintaining Point Digits

PREVENTATIVE INSPECTION

All Point Digit systems undergo extensive quality assurance inspections prior to shipping. Regularly inspect **Point Digit IIs** for dirt/grime in the joints, ratchet teeth, and sliding track. Clean **Point Digit IIs** (see MAINTENANCE section below) if decreased performance occurs.

MAINTENANCE

The **Point Digit II** can be cleaned with soap + water, mild detergent, or compressed air. Be sure to dry a **Point Digit II** completely after getting wet, especially when the liquid is likely to accelerate corrosion (e.g., salt water, sweat, etc.).

Lubrication (e.g., WD-40, graphite, etc.) may be applied to the joints and track after cleaning if increased resistance occurs.

No regular care is needed for the fingertip pads, but they can be cleaned with isopropyl alcohol if needed.

For any abnormal issues, discontinue use and contact Point Designs for support.

DISPOSAL

A **Point Digit II** should not be thrown away with common household waste. Dispose of the **Point Digit II**(s) by either returning the unit(s) to Point Designs or taking the unit(s) to your nearest metal recycling center.

REPAIRS, RETURNS + WARRANTY

Please contact Point Designs at **support@pointdesignsllc.com** regarding repairs and returns. **The Point Digit II** comes with a 1-year manufacturer's defect warranty.

Details of the warranty are in seperate documentation available at **www.pointdesignsllc.com/documentation.**

Safety and Warnings

WARNING: The **Point Digit II** is not designed to operate continuously in wet environments. A **Point Digit II** may get wet occasionally, but the user should be advised to thoroughly dry the **Point Digit II** after exposure to any liquid. Prolonged exposure to liquid may cause corrosion.

WARNING: The **Point Digit II** is electrically conductive and thus presents a potential electric shock hazard if it contacts a voltage difference and the user's (or someone else's) skin simultaneously. The **Point Digit II** should not be used around high voltage/current.

WARNING: The **Point Digit II** is thermally conductive and thus presents a potential burn hazard if it contacts a heat source and then the user's (or someone else's) skin subsequently. The **Point Digit II** should be kept away from hot objects. If a **Point Digit II** becomes hot, it should be allowed to cool before skin contact.

WARNING: The **Point Digit II** contains ferrous material, and can therefore interact with magnetic fields. Care should be taken when using a **Point Digit II** around magnets to avoid accidental attraction. For example, *keep away from MRI machines.*

WARNING: The **Point Digit II** contains moving parts (e.g., linkages, springs, ratcheting mechanisms, etc.), and thus presents a minor pinching hazard. The user should take care to keep loose skin, clothing, etc. from the moving parts of the **Point Digit II.**

WARNING: The Point Digit II contains internal springs under tension. The spring-back mechanism causes the finger to extend rapidly presenting a minor hazard. The user should take care to keep the Point Digit II away from self and others during spring-back.

WARNING: Any unauthorized modification to a Point Digit System can pose a safety risk to the user and will void the warranty. Changes or modifications not expressly approved by point designs could void the user's authority to operate the equipment.

WARNING: Adding material (e.g., coverings, etc.) to a Point Digit II that can trap moisture is not advised due to the likelihood of accelerated corrosion.

WARNING: Care should be taken when grasping objects to ensure a secure grip.

NOTES

NOTES

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