HddSurgery

Tools for data recovery experts

Guide for using HddSurgery™ head change tools:

▪ HDDS Sea 3.5” Helium P10 Ramp Set Type I

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1. Introduction

This guide is intended as a short course in handling of our tools for professionals in data recovery. It is assumed that the user is experienced in data recovery and familiar with “traditional" ways of saving data. This manual should not be taken as a guide for training.

Using these tools without adequate software support is not recommended. It is recommended to use some of the proven systems for cloning, such as Ace Lab, Salvation Data, Copy-r and other products.

It is possible to recover data without HddSurgery™ tools. In many cases, the known processes of hard drive head replacement are effective and sufficient. The general idea behind HddSurgery™ tools was to make sure that the process of replacing damaged hard drive heads goes with no errors. The use of HddSurgery™ tools prevents the ferromagnetic read/write heads to come in any kind of contact with the platter i.e. disk surface or other read/write heads. Also, with some basic procedures and short training, it is possible to let junior data recovery technicians handle complex tasks. With the development of these tools, we are trying to eliminate the element of luck that usually accompanies the process of data recovery.

Experienced data recovery technicians or engineers can have great success even without our tools, but they can have absolute security only by using HddSurgery™ tools.

Non-contact head replacement implies that there is no contact between the heads, or between heads and platters in the process of dismounting the donor heads and mounting heads on the patient drive. Traditional technique of replacing the heads imply contact between the heads and contact of heads with the platters in data area. These problems especially come to light on drives that have suffered some form of physical damage.

A donor selection process is not covered by these guidelines. If you have questions about compatibility, you can send them to HddSurgery™ support team on support@hddsurgery.com

HddSurgery™ is not responsible for any eventual damage caused by usage of our tools.

HddSurgery™ is not responsible for the data stored on the patient or donor hard drives

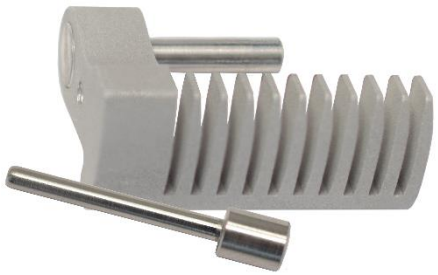
2. HddSurgery™ Sea 3.5” Helium P10 Ramp Set Type I

HddSurgery™ Sea 3.5” Helium P10 Ramp Set Type I represents a pair of head replacement tools which can be used to safely and easily replace heads on the Seagate 3.5" helium filled hard drives with 10 platters which “park their read/write heads” on a ramp.

NOTE: Working on helium hard drives is a complicated data recovery procedure, and it is crucial for the drives to be well and securely stabilized before any work is done on them. We highly recommend utilizing the HDDSurgery™ Hard Drive Repair Workbench in your data recovery process. Additionally, the Helium Opener is available in the HDDSurgery tool lineup and significantly facilitates the safe removal of the welded aluminum cover on helium drives.

The set contains a pair of head replacement tools: Sea 3.5” Helium P10 Ramp Type I.

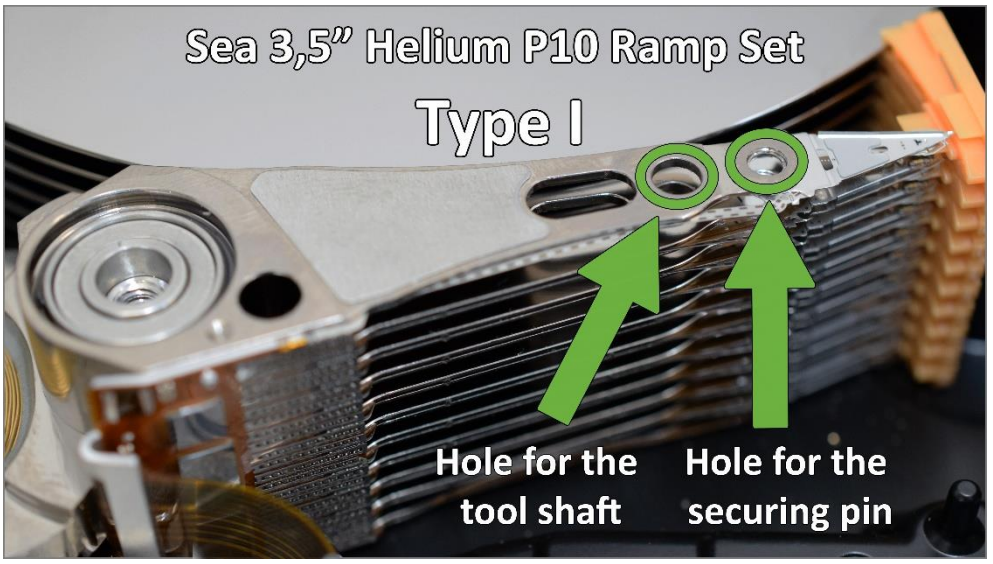
- Sea 3.5” Helium P10 Ramp Type I tool



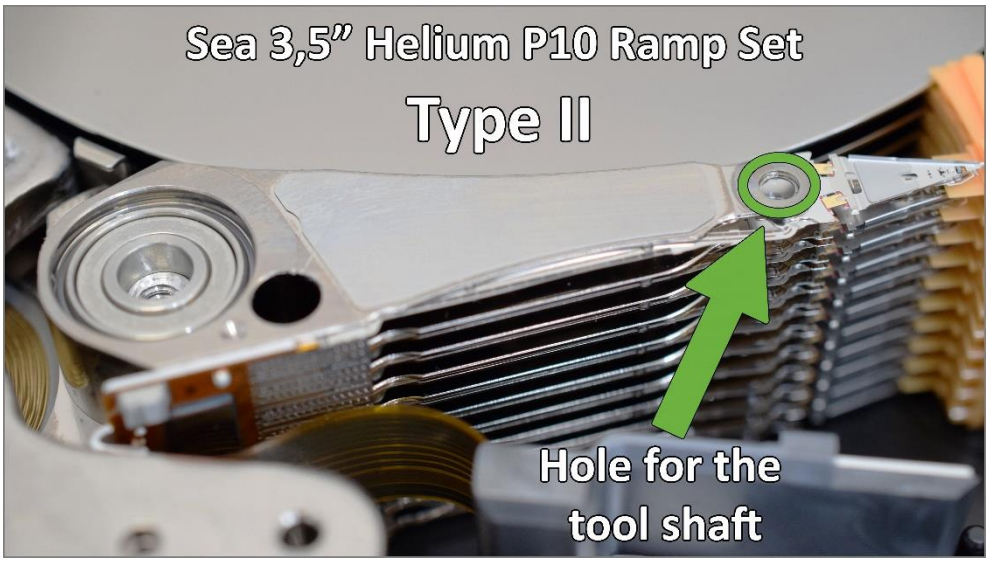
This head replacement tool can be used on 3.5” Seagate helium-filled hard drive models with 10 platters and ramp-parked heads. The tool is intended for models whose HSA has **two holes**: one for the tool shaft and one for the securing pin.

3. Do you need Type I or Type II?

To determine which tool you need for your Seagate helium hard drive with 10 platters, open the drive and inspect the hole pattern on your drive's HSA.
If the HSA has holes for both the tool shaft and the securing pin, the appropriate tool is the Sea 3.5"Helium P10 Type I (Picture 1).
If only the hole for the tool shaft is present on the HSA, the appropriate tool is the Sea 3.5" Helium P10 Ramp Set Type II (Picture 2).



(Picture 1: HSA with holes for the tool shaft and securing pin – Sea 3.5" Helium P10 Type I tool)



(Picture 2: HSA with only a hole for the tool shaft – Sea 3.5" Helium P10 Type II tool)

4. Supported models

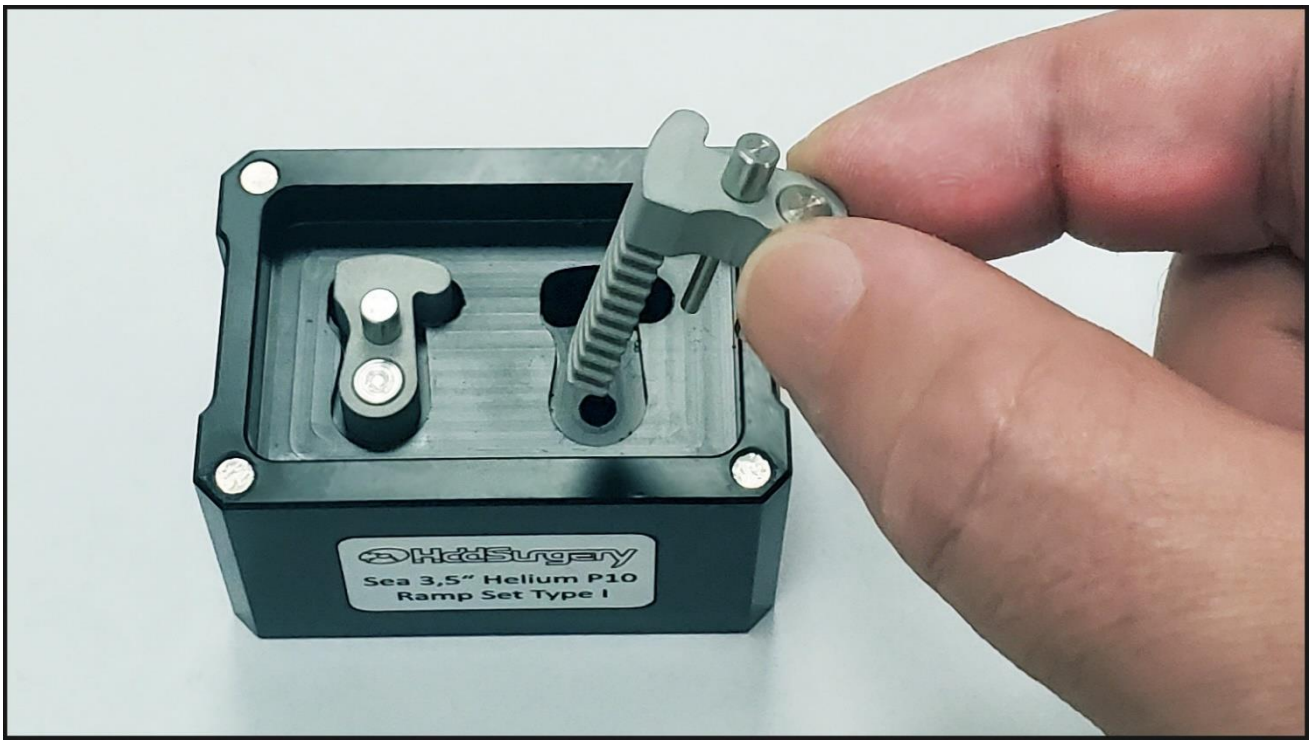
Sea 3.5” Helium P10 Ramp Set Type I Supported Seagate families:
ST18000NE000 The list of Seagate families and models on which the head replacement process can be performed using the ramp tools from the HDDSurgery ™ Sea 3.5” Helium P10 Ramp Set Type I.

5. Handling the tools

When not in use, the tools should always be kept in a wooden box delivered with the tools. This way of keeping the tools prevents any possible damage which could appear when not handled properly.

When taking the tool out of the box, always hold it for the shank. Never hold the tool in the part where the head lifting snouts are. (Picture 1)

Due to the sensitivity of hard drive platters to dust and any kind of contamination, be sure to clean the tools before their use. Tools can be cleaned with a piece of cotton wool and alcohol. When cleaning the head lifting snouts, be extremely gentle.



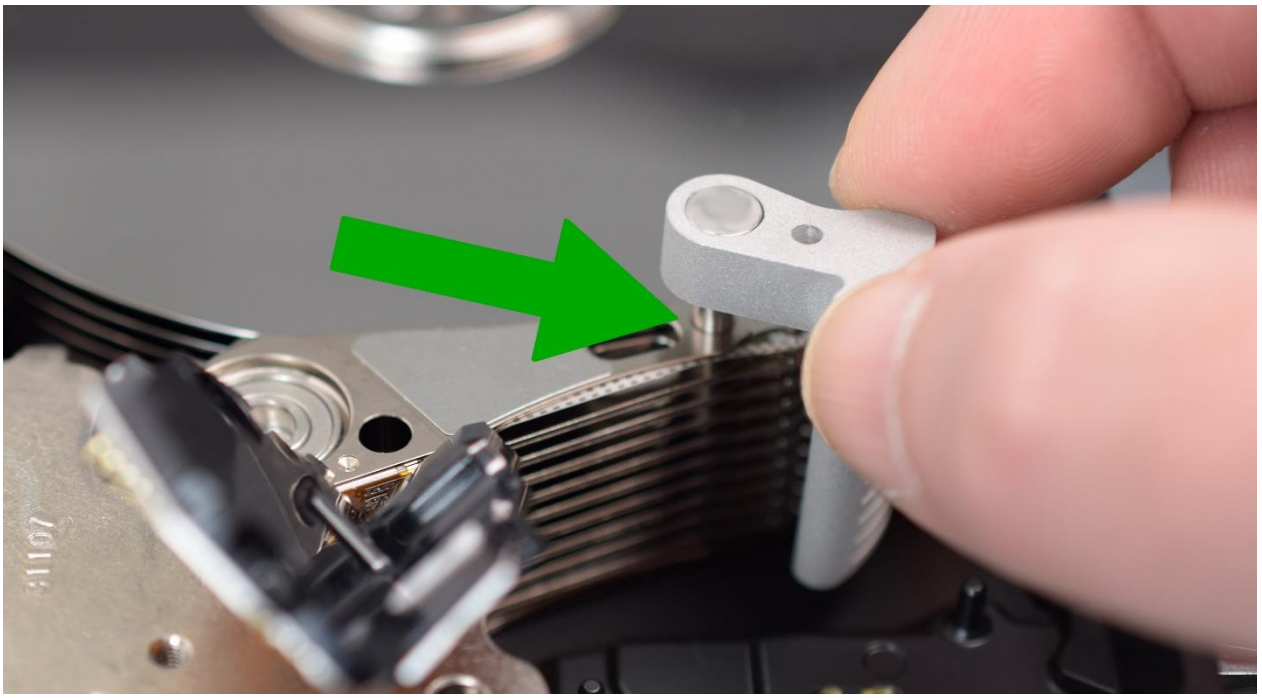
(Picture 1: Proper tool handling)

6. Head replacement process

Step 1 - Mounting the tool on actuator arm

Before removing the magnet, secure the heads with the HDDSurgery™ tool. To mount the tool, first insert the tool pin into the appropriate hole on the Head Stack Assembly (HSA). (Picture 2)

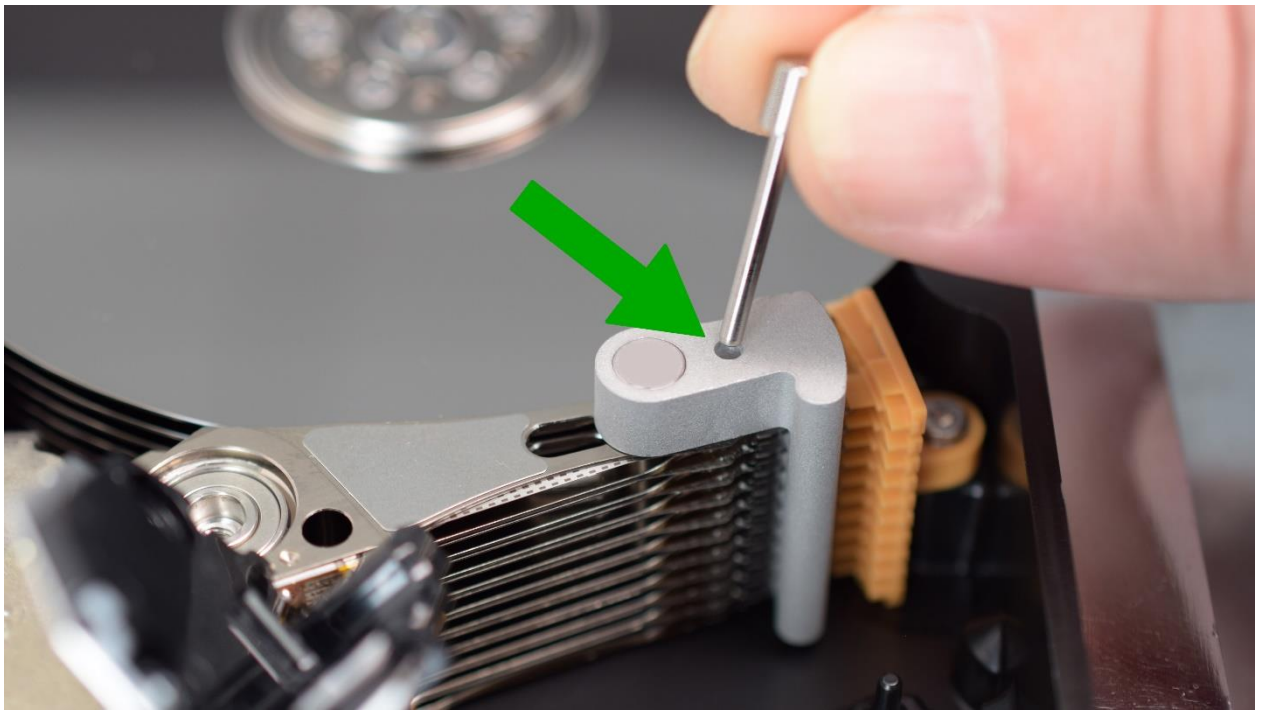
Carefully slide the tool between the heads. **NOTE:** If you feel resistance, this is common due to the large number of heads. However, proceed with extra care to avoid damaging the tool snouts or the HSA.



(Picture 2: Inserting the tool shaft into the corresponding hole on the HAS)

Step 2 – Securing the tool

The next step is to secure the tool with the securing pin. Ensure the hole in the tool is properly aligned with the corresponding hole in the HSA. The pin should pass through smoothly without excessive force. If it does not, remove and reinstall the tool to achieve proper alignment before inserting the securing pin. *(Picture 3)*

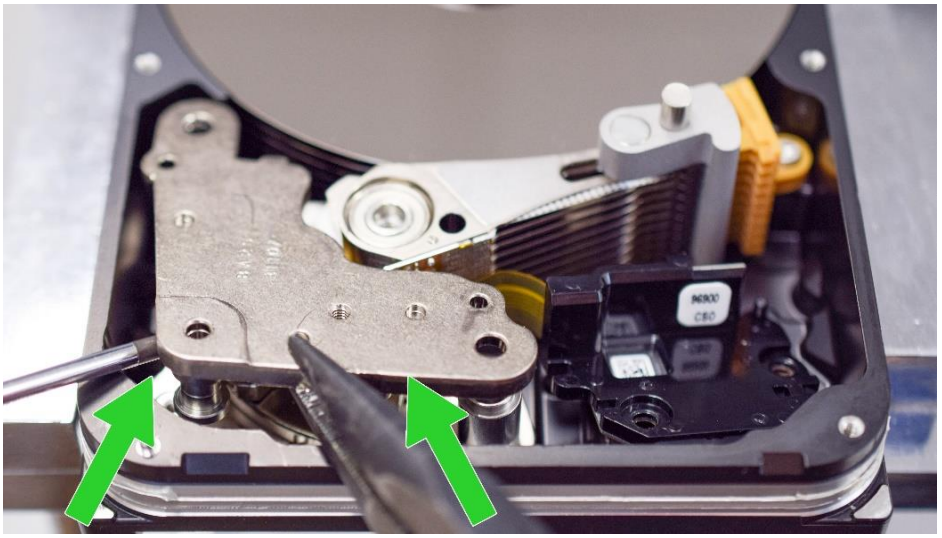


(Picture 3: Inserting the securing pin through the aligned tool and HSA holes)

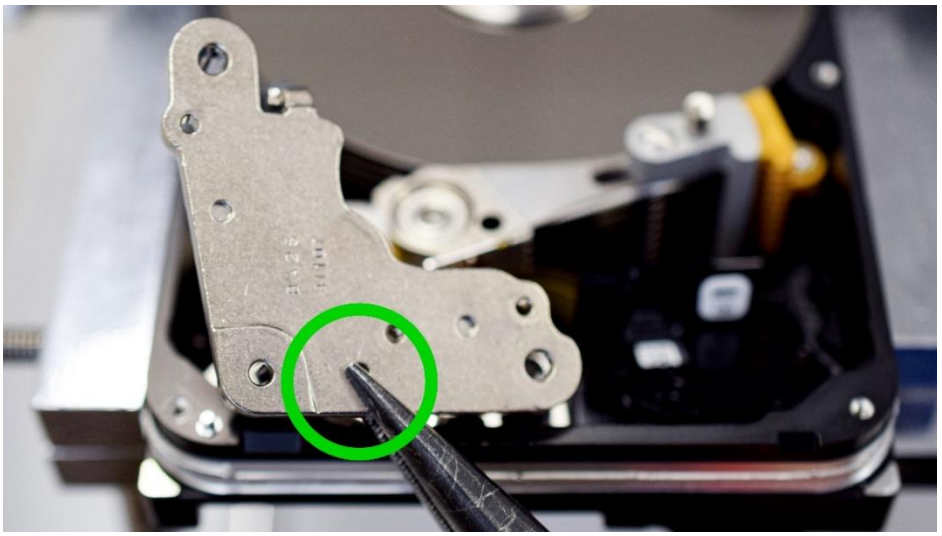
Step 3 - Removing the magnet

Once the heads are secured, carefully remove the magnet. You may use a screwdriver to gently lift one side of the tool to create enough clearance for the needle-nose pliers (Picture 4). Ensure a firm and stable grip on the magnet with the pliers so that removal is performed in a single, controlled motion, without any risk of the magnet twisting, slipping, or being unevenly stressed by the pliers. (Picture 5)

NOTE: Magnets used in helium-filled hard drives are larger and significantly stronger than those in air-filled hard drives. Take extreme care to prevent the magnet from coming into contact with the platters and avoid applying excessive force to the Head Stack Assembly (HSA), as this may result in bending or damage to the HSA.



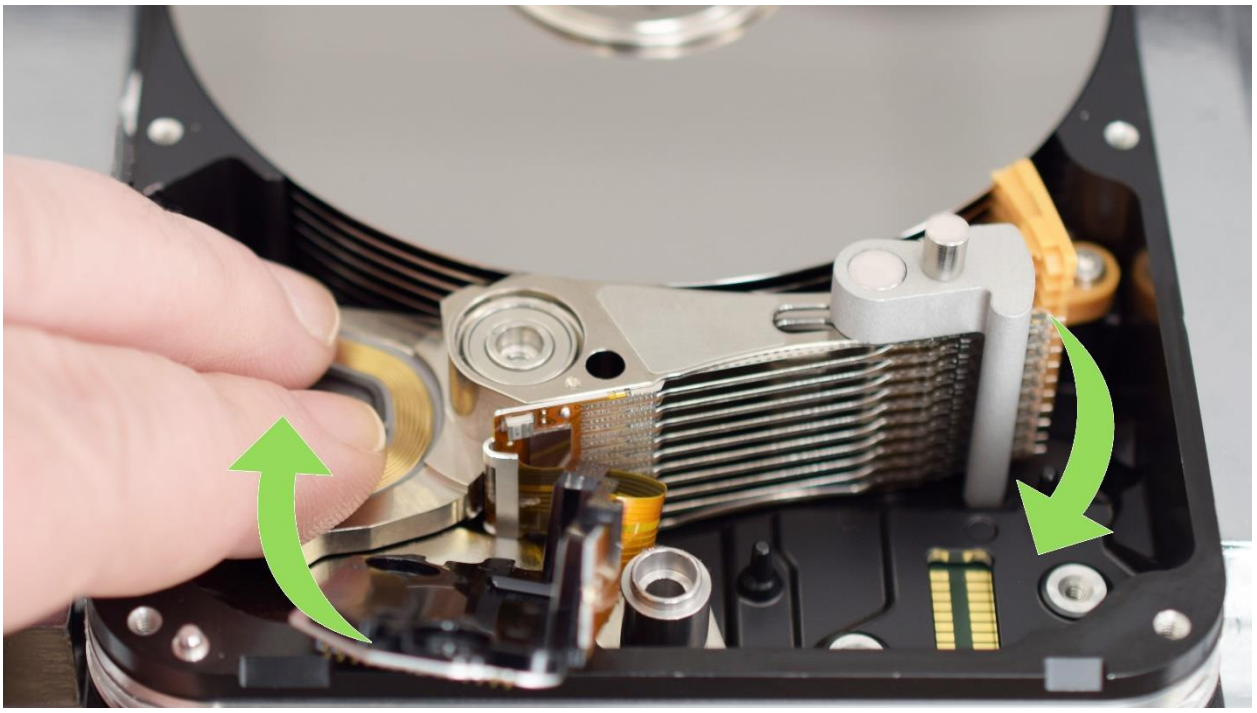
(Picture 4: Creating clearance for needle-nose pliers using a screwdriver)



(Picture 5: A strong grip ensures magnet stability during removal and installation)

Step 4 - Moving the heads off the ramp

Carefully slide the heads off the ramp by gently pushing the voice coil (Picture 6).
Once the heads are clear of the ramp, proceed with dismounting the head assembly.



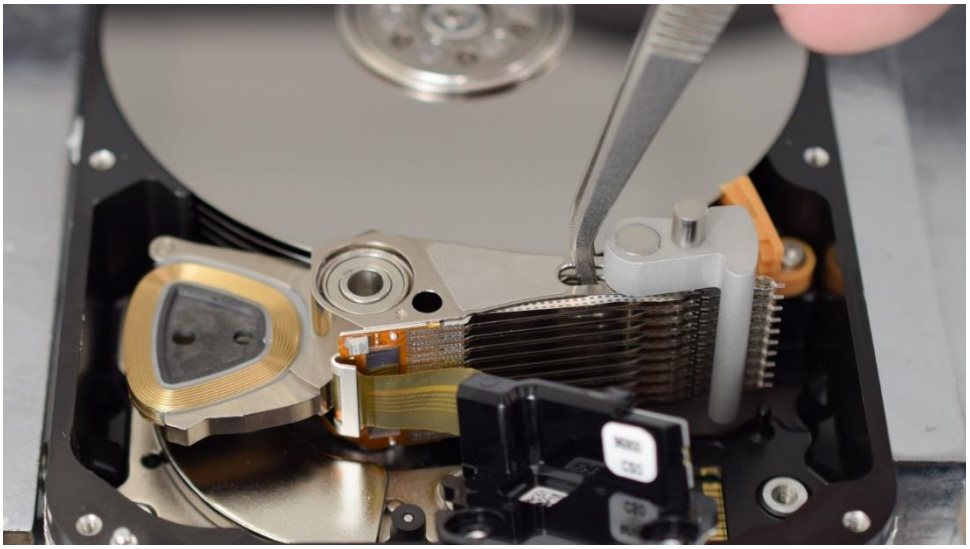
(Picture 6: Sliding the heads off the ramp)

Step 5 – Dismounting the heads

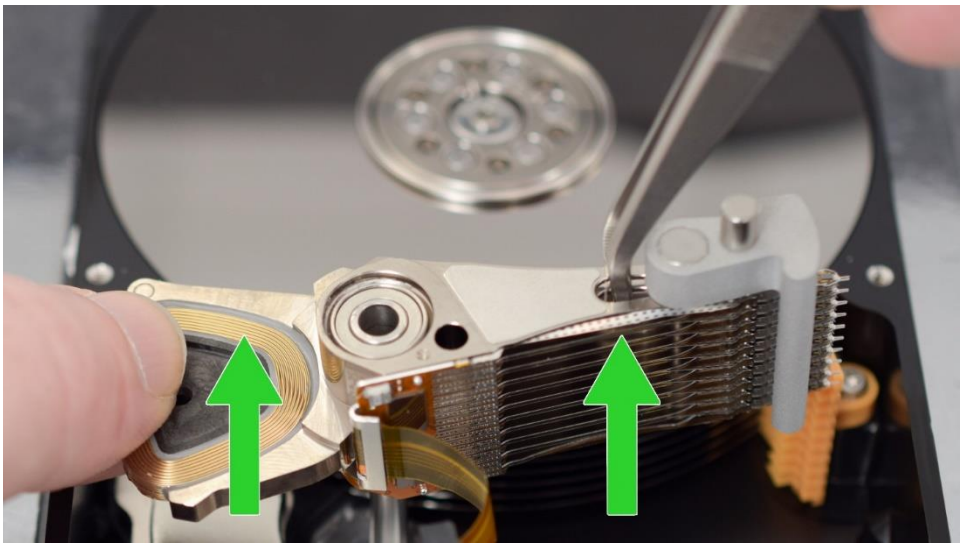
To lift the head assembly, tweezers are required. Use the tweezers to grip the head assembly through the hole on the head arm (Picture 7).

While pulling the head arm upward with the tweezers, use a finger to simultaneously lift the back of the head arm (the side with the magnetic coil) to ensure the assembly moves straight up (Picture 8).

Avoid dismounting the heads by pulling the tool directly.



(Picture 7: Gripping the heads with tweezers)



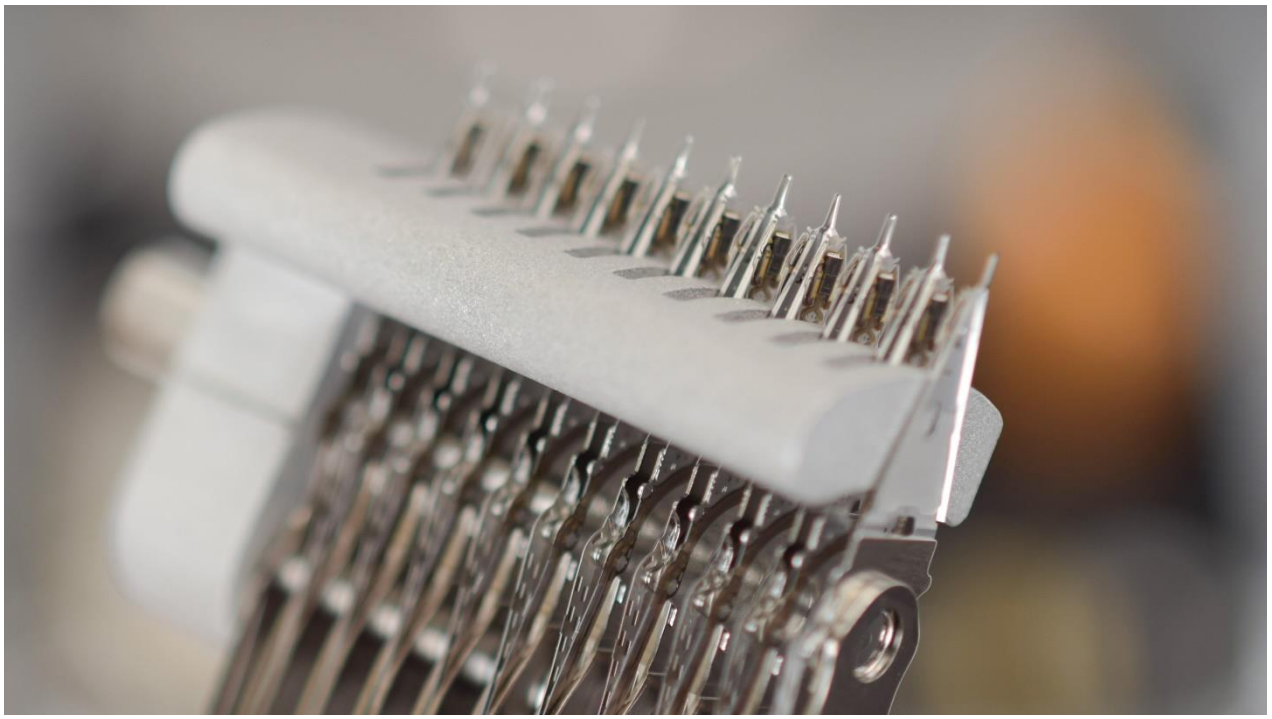
(Picture 8: Lifting the HSA with tweezers while supporting the voice coil by hand)

Step 6 – Mounting the heads in a patient drive

Place the head assembly into the patient hard drive using tweezers, assisting with your other hand. Once the head arm is in position, slide the heads onto the ramp. Reinstall the magnet while holding the HSA secure.

NOTE: Take great care during this step, as the magnet could damage the heads if it lands on the magnetic coil of the head arm or scratch the platters.

Remove the tool and screw the electronic connector back into place.
Reinstall the drive cover.



(*Removed heads secured with Sea 3.5" Helium P10 Type I tool*)

Thank you for choosing HDDSurgery™ data recovery tools.
For more information about this and other professional data recovery tools, please visit our website:

http://www.hddsurgery.com/

You can also watch demonstration videos and tutorials on our YouTube channel:

http://www.youtube.com/user/HddSurgery