



Tools for data recovery experts

Guide for using HddSurgery™ head change tools:

- ***HDDS WD 2.5" Slim Set***

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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 get 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 which 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 when 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 techniques 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.

These tools do not solve the head compatibility problem. They will only assure that the head replacement goes easily. 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™ WD 2.5" Slim Set head replacement tools

HddSurgery™ **HDDS WD 2.5" Slim Set** represents a pair of head replacement tools which can be used to safely and easily replace heads on the Western Digital 2.5" Slim hard drives with 1-2 platters which "park" their read/write heads on a ramp.

The set contains:

- **WD 2.5" Slim 1**

This head replacement tool can be used on 2.5" WD Slim hard drive models which have 1 platter and with their heads parked on a ramp.

- **WD 2.5" Slim 2**

This head replacement tool can be used on 2.5" WD Slim hard drive models which have 2 platters and with their heads parked on a ramp.

3. Supported models

HDDS WD 2.5" Slim Set Supported models*

List of Western Digital families and models on which process of head replacement could be performed by using the ramp tools from HDDS WD 2.5" Slim Set.

WD10SPCX-xxKHST0
WD10SPCX-xxHWST0
WD5000MPCK-xxAWHT0
WD5000M22K-xxZ1LT0
WD5000MTCK-xxSP1T0
WD5000M13K-xxWHKT0
WD7500L12X-xxJTET0
WD5000M21K-xxJU5T0

* The list of tools may be updated as we get information from the market. HddSurgery isn't responsible if the producer change the architecture of a drive from the list above.

4. 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.

While 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.

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 4.1. HDDS WD 2.5" Slim Set

5. Head replacement process on WD Slim 2.5" hard drives

Step 1 – Preparing the drive

Remove all labels from the drive. Carefully remove the PCB from the drive.

Remove all screws which are holding the lid. Remove the lid in order to open the drive.

Tighten the head stack assembly with a bolt in order to prevent unwanted movements.



Picture 5.1. Inserting the bolt and securing the heads

Remove the upper magnet carefully. Place a non-countersunk screw and tighten the bottom magnet in order to prevent the any unwanted movements.



Picture 5.2. Removing the upper magnet

Remove the flat cable.

ATTENTION! Be very careful while performing this operation because the heads can hit the platters.



Picture 5.3. Removing the flat cable

Step 2 – Mounting the tool

Carefully move the heads to the end of the ramp, just above the platters.

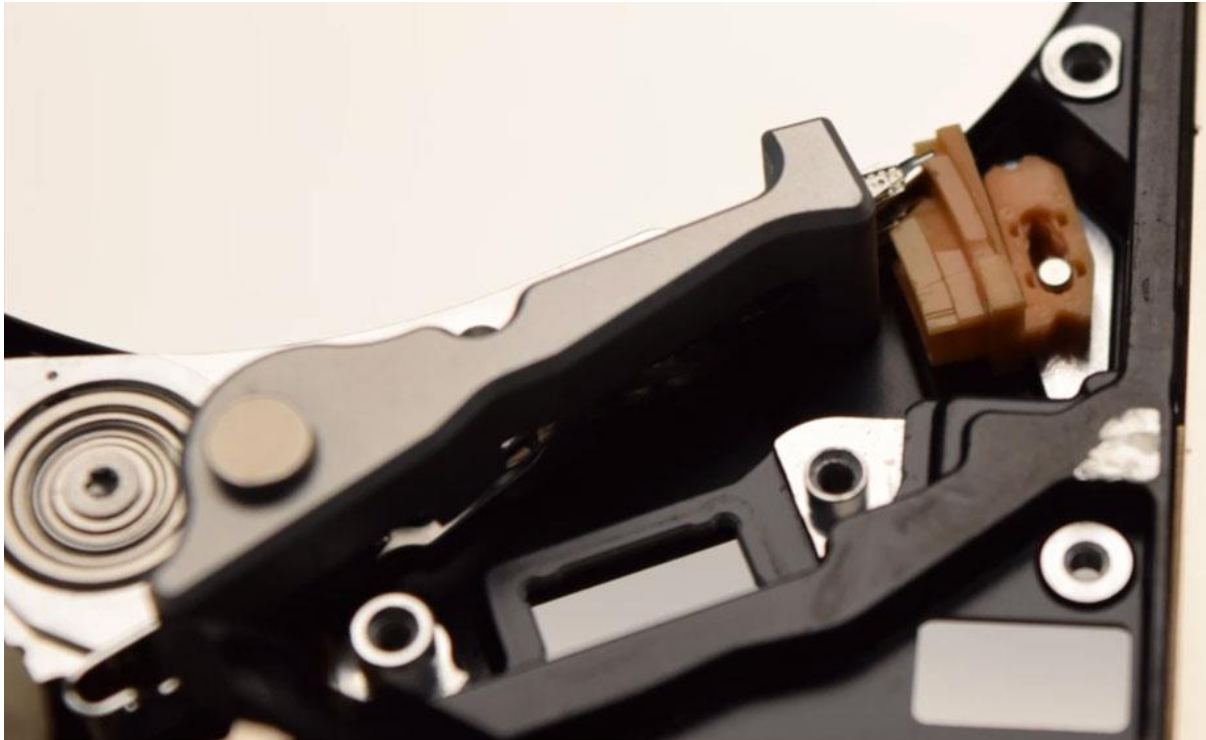


Picture 5.4. Moving the heads to the end of the ramp

ATTENTION! Be very carefull while performing this action as there is a danger for the heads to slide on the platters.



Carefully center the axis of the tool over the smaller hole on the head arm. Take care that the snouts are positioned away from the heads, and push the axis of the tool all the way down through the hole. Axis of the tool should go easily through this hole.



Picture 5.6. Placing the tool

Push the tool so the snouts go between the heads. These snouts will keep the distance between the heads and assure that the heads don't touch each other. You may slightly move the heads toward the platters while inserting the tool.

Perform this action with additional precaution as there is a possibility the heads could get damaged.

When the tool is mounted, gently move the heads over the platters and stop when the ramp is free for dismounting.



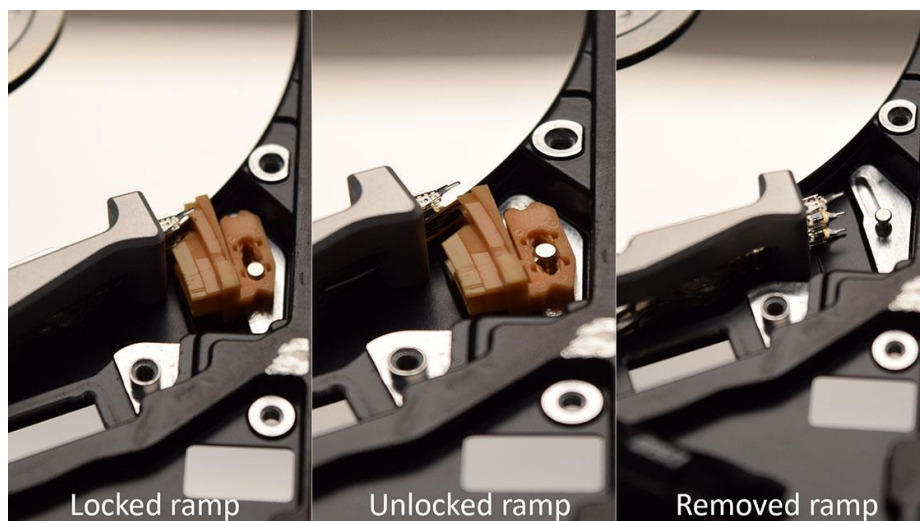
Picture 5.7. Moving the heads over the platters

Dismount and remove the ramp.



Picture 5.9. Dismounting the ramp

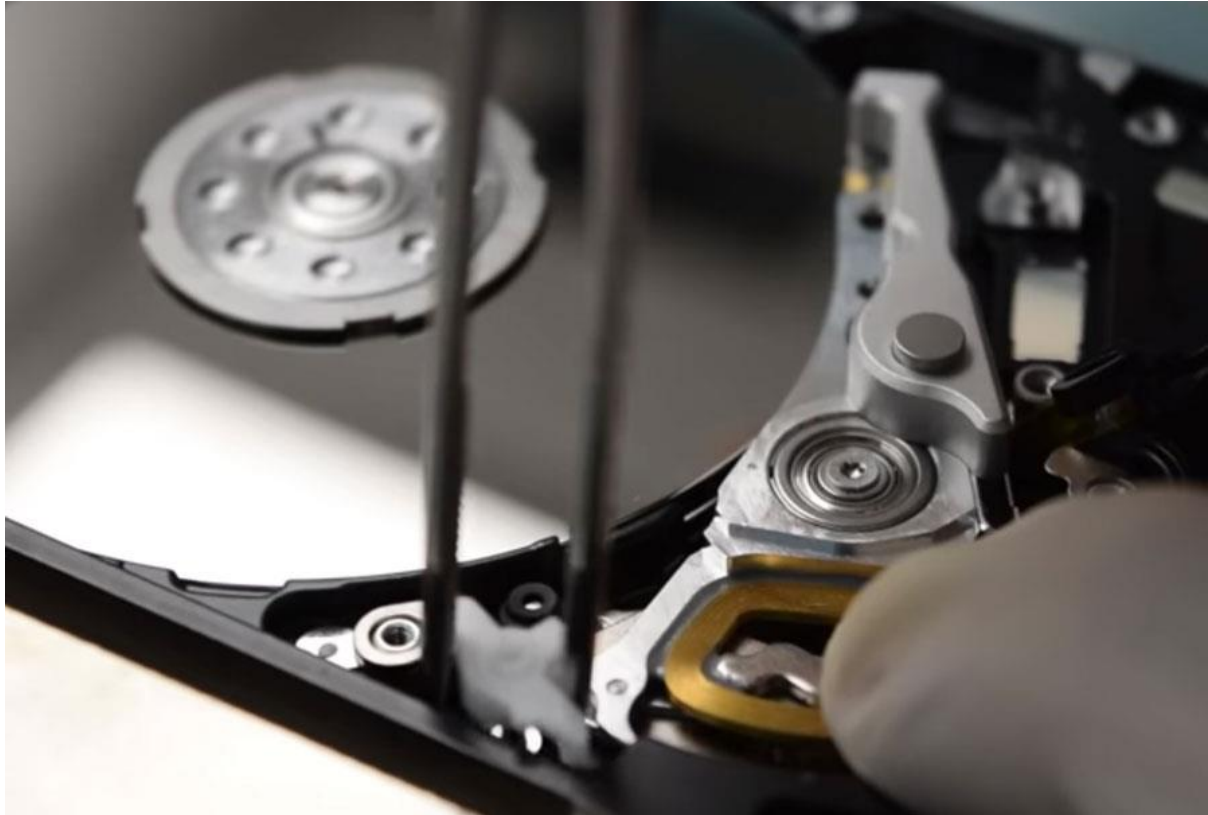
ATTENTION! The ramp has locked/unlocked position. Be very careful while unlocking, the ramp can hit the platters or to be dropped on the surface.





Picture 5.10. Sliding the heads off the platters

Remove the security brake which is protecting the head arm. While removing the brake, hold the head arm with your other hand to prevent the heads from going back to the ramp area.



Picture 5.11. Removing the security brake

Unscrew and remove the screw which is holding the head arm connected to the hard drive casing. While unscrewing this screw, hold the head arm with your other hand to prevent the heads from going back to the ramp area.

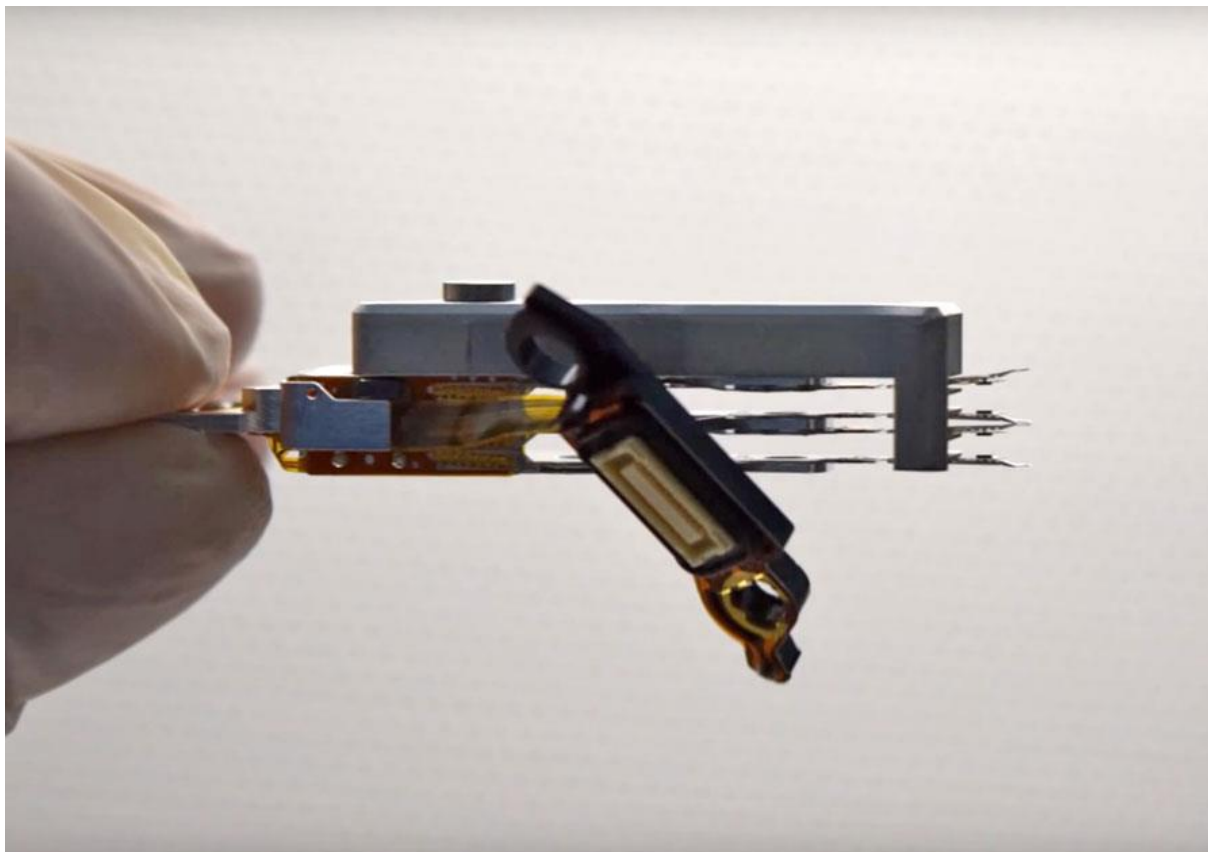


Picture 5.12. Removing the screw

To lift the head assembly, pull the tool and head arm up. To make sure that the head assembly goes straight up, you may use one finger to pull the back side of the head arm (side where the magnetic coil is) simultaneously.



Picture 5.13. Lifting the heads



Picture 5.14. Wd slim heads

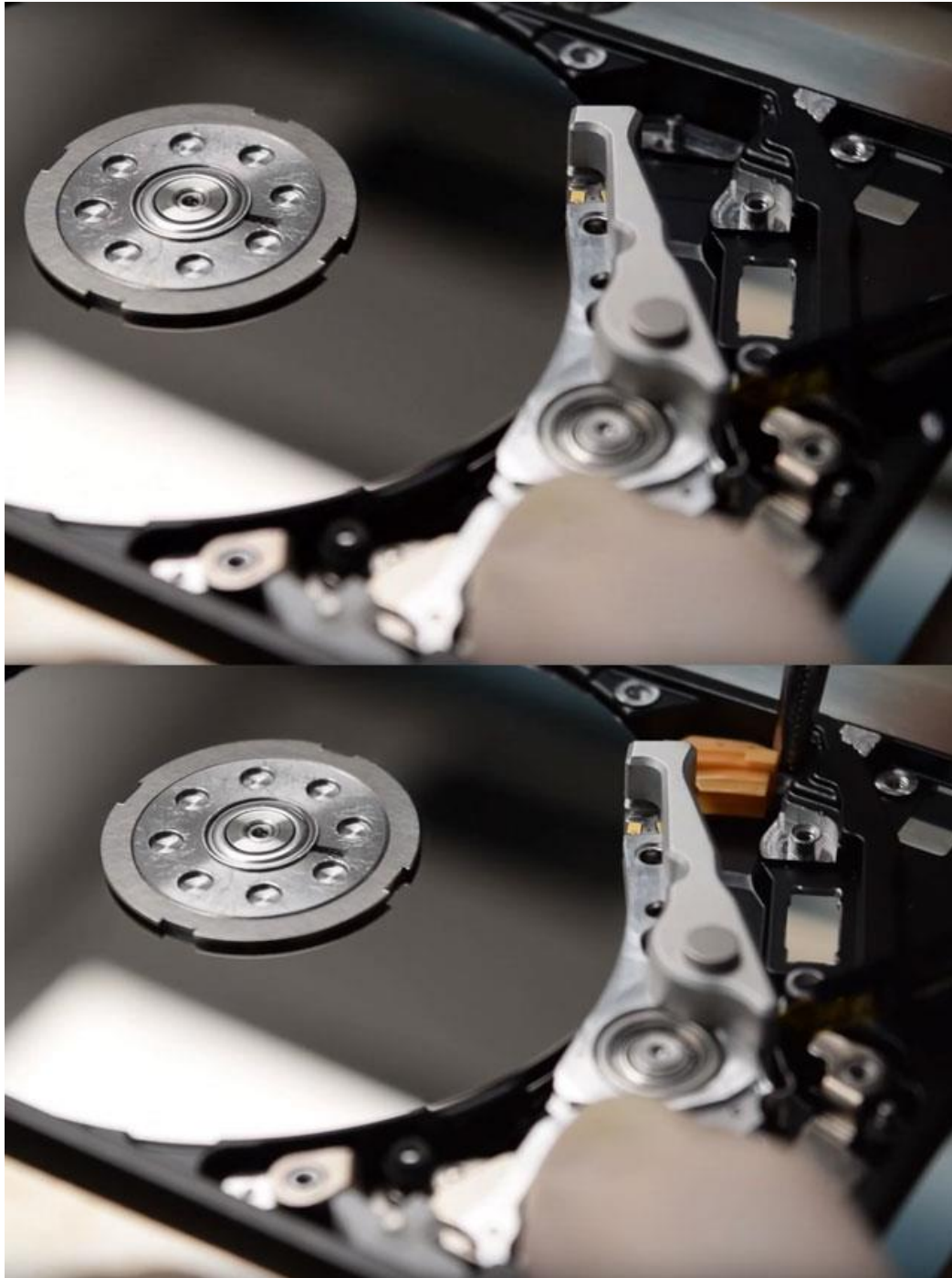
Step 3 – Returning the heads

Place the head stack assembly to its position. Place the security brake and tighten it with a screw in order to prevent any unwanted movements.



Picture 5.15. Returning the HSA

Place the heads over the platters and mount the ramp. Use one finger to pull the back side of the head arm (side where the magnetic coil is) simultaneously.



Picture 5.16. Positioning the head stack assembly

Slide the heads over the ramp. Scroll the tool away from the heads. While holding the head arm in its place with one hand, pull the axis of the tool out of the hole to dismount the tool.



Picture 5.17. Dismounting the tool

Unscrew the bolt which is holding the bottom magnet and return the flat cable.



Picture 5.18. Removing the screw from the bottom magnet

While holding the heads on the ramp, return the magnet to its place. Be very careful in this step because the magnet might damage the heads if it lands on the magnetic coil of the head arm.

Unscrew the bolt which is holding the head stack assembly.



Picture 5.19. Removing the screw from the HSA

Put the lid back to close the drive. Put the PCB back and clone the drive.

6. Conclusion

This guide was written by HDDSurgery™ team and it is based on our experience acquired during the process of development, design and testing.

HddSurgery™ is not responsible for any possible consequential damage, including the loss or recovery of data or any other damage made by using or working with HddSurgery™ tools.

You can find more information about these tools and many other tools used for data recovery on our website:

<http://www.hddsurgery.com/>

Also you can watch the videos that show how these tool work on our YouTube channel:

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

If you have any doubts or questions regarding use of HDDS WD 2.5" Slim set, you can contact our support team any time:

support@hddsurgery.com