Struers
Ensuring Certainty

MD-Allegro
User Guide

Original Instructions

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1 Description

The MD-Allegro is a coarse polishing surface for materials with a hardness > HV 150.

This MD surface is used with diamond products in grain sizes from 15 - 6 µm and is optimized to be used with DiaPro Allegro/Largo 9 µm all-in-one suspension. Alternatively, this MD surface can be used with traditional diamond suspension and alcohol-based or water-based lubricants.

The MD-Allegro is to be used in combination with an MD-Disc of the same diameter.

2 MD-Allegro safety precautions

2.1 Read carefully before use

1. Use only an MD-Disc when using MD surfaces for preparation.

2. When the disc is rotating, make sure your hands are kept completely clear of its periphery and out of the splash bowl.
3. Do not remove the MD surface until the MD-Disc has come to a complete standstill.
4. Do not exceed a rotational speed of 600 rpm.
5. Do not use the MD-Allegro if it is damaged.
6. Never try to repair the MD-Allegro.
7. Do not apply a total force higher than 250 N on 200 mm diameter discs, 400 N on 250 mm diameter discs and 700 N on 300 mm and 350 mm diameter discs during preparation.
8. Always read the safety precaution sheet and the instruction manual for the machine you are going to use with the MD-Allegro.

3 Instructions for use

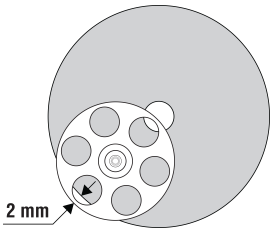
Place the MD surface on the MD-Disc

1. Make sure that both the surface of the MD-Disc and the back of the MD surface are clean and dry.
2. Align the edge of the MD surface with the MD-Disc.
3. Place the MD surface on the MD-Disc with the steel backing facing the MD-Disc and make sure that it is securely fixed.

Note
If you are using the MD surface with fully automated equipment, see the instruction manual for the equipment for instructions.

3.1 Place the specimen holder

We recommend that you place the specimens so that they protrude at least 2 mm over the edge of the MD surface.



3.2 Usage

This MD surface is used with diamond products in grain sizes from 15 - 6 µm and is optimized to be used with DiaPro Allegro/Largo 9 µm all-in-one suspension. Alternatively, this MD surface can be used with traditional diamond suspension and alcohol-based or water-based lubricants.

Abrasive

Apply an appropriate amount of abrasive before using the MD surface for the first time. Afterward, apply abrasive on a regular basis.

Lubricant

Apply an extra amount of suspension or lubricant before using the MD surface for the first time.

Keep the lubricant level constant during the operation, and make sure that you do not apply too much, as this will reduce the effect of the abrasive.

Lifetime

Replace the MD surface when the hexagons closest to the center are worn.

3.3 Applied force

The recommended force is 25 - 40 N for specimens with a 30 mm diameter.

- If needed, reduce the force for smaller specimens, and increase the force for larger specimens.

Note
Higher force increases the removal rate, but can also increase deformation of the specimens and reduces the lifetime of the MD surface.

3.4 Rotational speed

The recommended speed is 150 rpm.

If the grinding machine allows it, you can safely use the MD surface with a rotational speed of up to 600 rpm.

A higher rotational speed will increase the removal rate, but it will require a higher amount of suspension or lubricant.

Note
Make sure that the grinding machine is safe and stable before using the MD surface with a rotational speed higher than 150 rpm.

Note
If you are running the MD surface at a higher rotational speed, make sure to adjust the suspension or lubricant flow accordingly.

3.5 Remove the MD surface

CAUTION
Do not remove the MD surface until the MD-Disc has come to a complete standstill.

- Lift the MD surface by the edges and remove it from the MD-Disc.

Note
Be careful not to permanently bend the steel backing.
If the steel backing has been permanently bent, discard the MD surface.

4 Cleaning

4.1 Clean the MD surface

Note
If you are using the MD surface with fully automated equipment, see the instruction manual for the equipment for instructions.

Preparation surface

1. Keep the MD surface spinning on the MD-Disc while cleaning.
2. Add water to the MD surface.
3. Drag a soft brush from the center to the edge of the MD surface.
4. Spin the MD surface to full speed to remove the water.

Contact surface

1. Clean the back of the MD surface with water and a soft brush.
2. Use compressed air to dry the surface.

4.2 Clean the MD-Disc

Clean the MD-Disc thoroughly every time you replace an MD surface or when debris starts to set on the contact face.

Hint
Magnetically held particles will appear as stripes on the contact face of the MD-Disc.

1. Use a cleaning agent that has a slight grinding effect.
2. Scrub the contact face with a brush or a hard sponge.
3. Wipe the contact face with a soft sponge and rinse with clean water.
4. Wipe the surface thoroughly with a soft cloth.

Note
It is essential that you keep the contact face clean.

Due to its magnetic properties, the MD-Disc can collect metallic particles from the preparation process. These particles will become compacted as they corrode.

5 Mark and store

Use a waterproof pen to write the application data on the free space on the smooth part of the metal backing on the MD surface. Do not cover the code.

Note
Never place an adhesive label on the back side of MD surface as this can change the thickness of the surface.

5.1 Storage

Note
Never store a wet disc in a plastic bag.

1. Make sure that the surface is dry.
2. Store the MD surface in a well-ventilated place.
3. Protect the MD surface against contamination.
4. When the MD surface is not in use, place it in an MD-Concert/MD-Concertino cabinet or similar.

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