

Instructions for use

# IRINO-PRO

## 1. Intended use

IRINO-PRO is a composite polishing pad that can be used with the addition of diamond suspension to polish workpieces made of metal, sapphire, ceramics and plastics. The IRINO-PRO pad is typically used on planar polishing machines in single and double-side processes. IRINO-PRO is mounted directly on the polishing plate or carrier plate by means of self-adhesive backing.

## 2. Safety instructions

ATTENTION: IRINO-PRO may only be used by trained personnel.

For maximum speed parameters see point 3.5. The maximum peripheral speed of 10 m/s must never be exceeded under any circumstances. Maximum operating temperature 45° C/ 113° F.

Oil and chemical resistance: Only diamond suspensions or lubricants approved by Pureon may be used. IRINO-PRO must not be used with defective, uneven or uncleaned carrier plates. In the case of visible external damage, IRINO-PRO may no longer be used.

## 3. Requirements

### 3.1. Abrasive feed

The polishing machine must be equipped for the automatic feeding of diamond suspension. The diamond suspension should be stirred continuously (unless it is a fully stabilized formulation).

### 3.2. Carrier rings

Carrier rings are used exclusively for material guiding and should be as light as possible so as not to impair the service life of IRINO-PRO. Slotted designs made of plastic or aluminum are suitable.

### 3.3. Contact pressure of the workpiece

Recommended: 0.2-0.4 kg/cm<sup>2</sup>; maximum: 1.5 kg/cm<sup>2</sup>

### 3.4. Recommended peripheral speed

Approx. 2-5 m/s, maximum peripheral speed 10 m/s.

### 3.5. Reference values for speed

Diameter (mm)	200	300	400	500	600	800	1'000
Recommended speed (RPM)	400	300	250	200	150	120	100
Max. speed (RPM)	990	630	470	380	310	240	190

### 3.6. Carrier plate

Flat-ground, clean lapping and polishing pads are suitable.

## 4. Preparation

### 4.1. Carrier plate

The carrier plate must be absolutely clean, plane, dry and free of grease.

### 4.2. Mount with PSA, Teflon, magnetic plate

IRINO-PRO must be centrally aligned and applied without bubbles.

#### 4.3. Provide diamond suspension/lubricant

A regular suspension supply must be ensured. The IRINO-PRO polishing pad must not run dry.

### 5. Dressing and conditioning before first use

Before using the IRINO-PRO pad for the first time, it must be conditioned or dressed. This resets the surface structure caused by the manufacturing process; only then can the pad develop its full performance. For double-side machining, dressing should be carried out in order to set the plane parallelism before the first use.

#### 5.1. Determine actual geometry

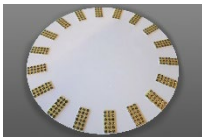
Before dressing, please determine the flatness (single-side machine) or the flatness and plane parallelism (double-side machine) using suitable measuring equipment.

#### 5.2. Dressing

Wet the IRINO-PRO pads with water, then carry out dressing without adding any more water. Select the correct correction program in accordance with the machine manufacturer's specifications and dress with a suitable dressing tool.

#### 5.3. Dressing tool

MicroDress nickel-bonded diamond dressing tools from Pureon, 120/140 mesh



Dressing tool  
MicroDress

#### 5.4. Contact pressure of the workpiece

Recommended: 0.1-0.2 kg/cm<sup>2</sup>

#### 5.5. Peripheral speed and duration

Speed and duration depending on the actual geometry determined and in accordance with the machine manufacturer's specifications.

#### 5.6. Clean with brushes

After dressing or conditioning, clean the IRINO-PRO pads from the generated grinding sludge with machine-specific nylon brushes.



Nylon brush

#### 5.7. Measure

Measure the geometry of the IRINO-PRO pad using a measuring tool provided with the machine. After dressing, the flatness should be +/- 20 µm, the plane parallelism should be <10 µm (these are approximate figures, the actual figures strongly depend on the geometry requirements for the finished workpiece).

If the geometry is insufficient, repeat the dressing process.

## 6. Parameters for production

### 6.1. Machine parameters

Recommended contact pressure: 0.2-0.4 kg/cm<sup>2</sup>, maximum contact pressure: 1.5 kg/cm<sup>2</sup>  
 Recommended peripheral speed: 2-5 m/s, maximum peripheral speed: 10 m/s

### 6.2. Suspension feed

Dosage quantities for single-side machines

Pad diameter (mm)	300	500	700
Revolutions per minute (RPM)	30-100	20-80	10-50
Peripheral speed (m/s)	1-4	1-4	1-4
Initial dosage (ml)	30	50	100
Suspension dosing (ml/h)	30-50	60-100	150-200

Dos Dosage quantities for double-side machines

Pad diameter (mm)	300	500	700
Revolutions per minute (RPM)	100-150	60-100	40-70
Peripheral speed (m/s)	3-5	3-5	3-5
Initial dosage (ml)	100	200	250
Suspension dosing (ml/h)	100-150	200-250	400-500

### 6.3. Positioning the parts

The entire surface of the IRINO-PRO pad must be used and thus used up.

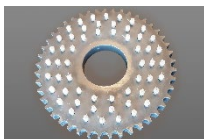
This can be done in two ways:

1. By overrun of the workpieces, i.e. the workpieces extend beyond the outer and inner edge or the center.
2. By overrun of the drive plates, carrier plates and conditioning rings.

## 7. Reconditioning

### 7.1. Clean with a brush

To remove workpiece abrasion, manual brushing using a nylon brush with water-soluble surfactants (detergent) is recommended. To do this, turn the pad slowly.



Nylon brush

### 7.2. Dressing

If the geometry of the workpieces is no longer sufficiently precise, the IRINO-PRO pad must be dressed until it is plane over the entire surface. Procedure see point 5.

## 8. Troubleshooting and tips

- 8.1. If the removal rate is initially too low or decreases significantly during the service life, the pad must be conditioned or dressed. See point 5.
- 8.2. If the surface of the pad is heavily clogged with abrasion, the pad should be cleaned. See point 5 and point 7.
- 8.3. Excessive supply of suspension ("flooding") generally leads to lower removal rates and high costs.

8.4. If the IRINO-PRO pad is not used for a long time, it should be cleaned, dried and protected against dirt with a clean cover.

## 9. Storage

Store lying flat or standing up at an angle of approx. 30 degrees to the vertical. Store at room temperature, dry and protected from direct sunlight. Clean used pads completely before storage.

## 10. Service life

The end of the pad's service life is reached as soon as the light structure of the carrier material becomes partially visible.

## 11. Demounting of the pad

Pads with self-adhesive backing can only be mounted once. Teflon-coated adapters are available for repeated mounting.

## 12. Disposal

The IRINO pads can be disposed of with normal household waste. Metal plates can be recycled. Please note the relevant local regulations.

## 13. Application video



An application video for IRINO-PRO-C is available on YouTube under the QR code on the left and under the following link: [https://youtu.be/1AEByjC\\_A8s](https://youtu.be/1AEByjC_A8s)