

EOS FANCY

The **perfect girdle** for
all shapes

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Introduction

Since the introduction of EOS bruting machines, round stones are no longer girdled by means of traditional machines or procedures.

In recent years, the demands put on the cut quality became increasingly higher, not only for round cuts but also for fancies. A perfect girdle is the very foundation of a well cut stone.

Problems like bearding, small chips or breakage towards the upper or lower side of the stone, were an issue for round stones. Until now, symmetry and accurate aspect ratio are some of the main problems for fancy shapes. Slight imperfections are simply no longer tolerated in the final appraisal of the diamond. So far, the industry has seen very few bruting ma-

chines for fancy shapes being introduced on the market. The introduction of laser-shaping was a big step forward. However, a laser does not offer the appropriate solution for the final girdle geometry.

Therefore, to improve the performance of the fancy-bruting, HRD Antwerp and WTOCD have developed the **EOS Fancy**, which brings together the EOS-technology and a state of the art motion controller.

EOS Fancy currently confines the deviation on the symmetry to zero. All fancy shapes can be made from round fancies to square fancies, and there is no danger of breakage of points on e.g. pear-shapes or marquise.

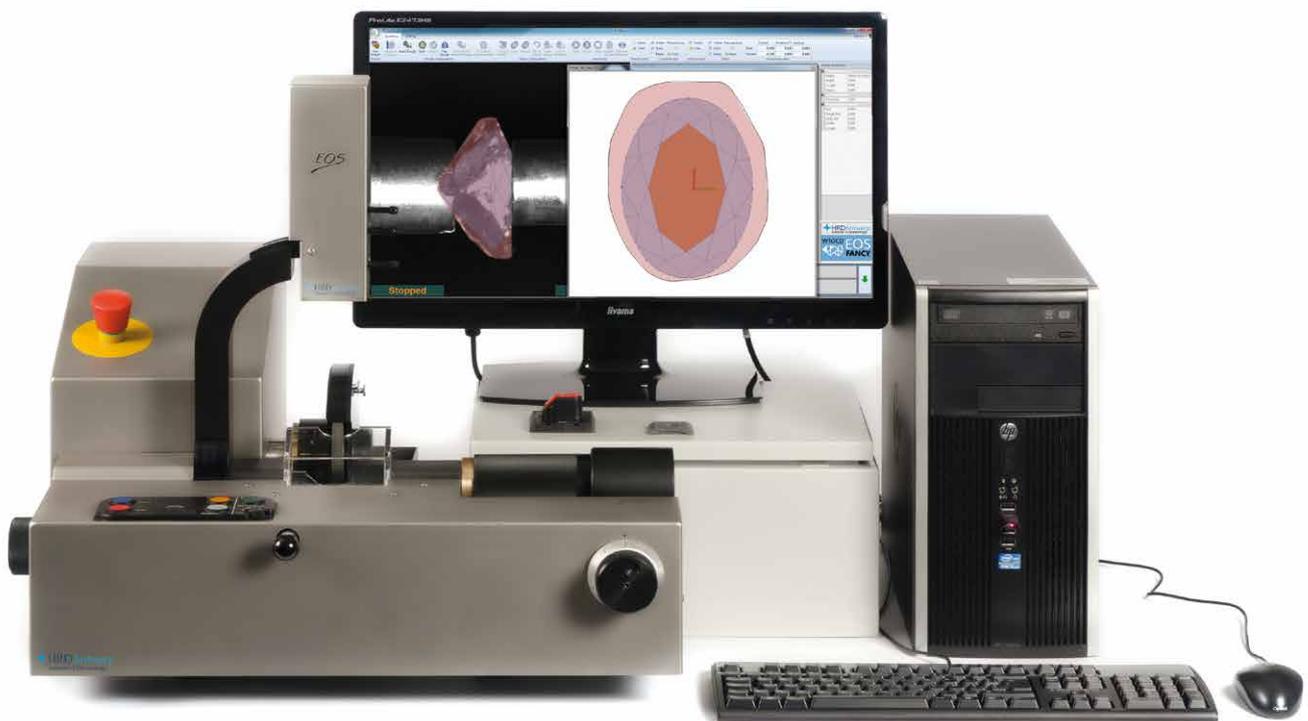


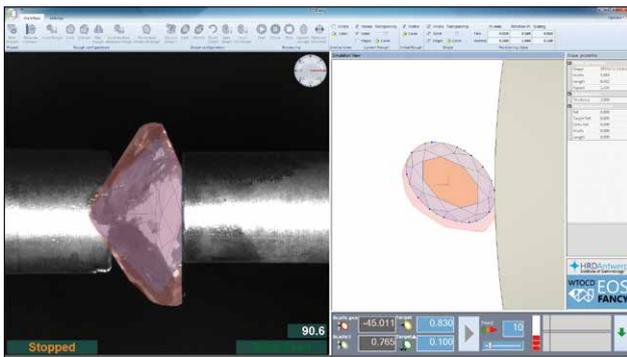
Photo 1: complete set-up of EOS Fancy.

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Principle

EOS and EOS Fancy are automatic machines for bruting and girdling diamonds.

The bruting cycle for round stones is extended to fancy



Screenshot 1: simulation of the bruting process of an oval cut.

The movements of the diamond disk are calculated in the machine software so that all convex shapes consisting of arcs and straight lines can be bruted. That means that Eos Fancy can brute not only curved shapes (round fancies) like pear, marquise, oval, cushion, but also straight shapes like emerald, princess, radiant.

EOS Fancy is suitable for stones with a minimum width of 2 mm and a maximal length of 30 mm.

The culet of the diamond is positioned in the pot. The pin works in two ways: it exerts pressure on the table, to keep the stone fixed during the process. At the same time it aligns the table of the stone, so the girdle is perfectly perpendicular to the stone.

Pots for fancies are specifically designed so that every fancy shape can be clamped in the pot. They come in different sizes, depending on the size of the stones. The pins are identical to the pins used for round ones. Both holders turn simultaneously at a low speed.

shapes by linking the feed movement of the disc to the rotational position of the diamond. This extension allows the manufacturer to cut fancy shapes automatically without having to centre the stone.

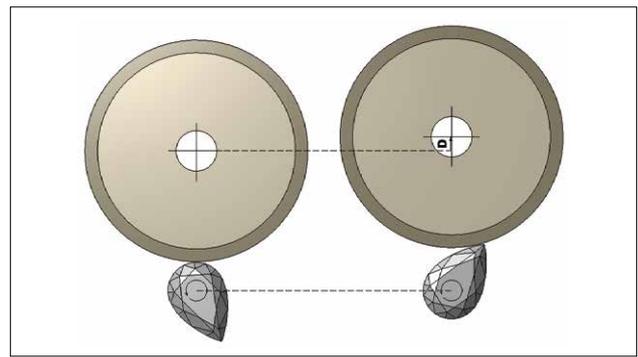
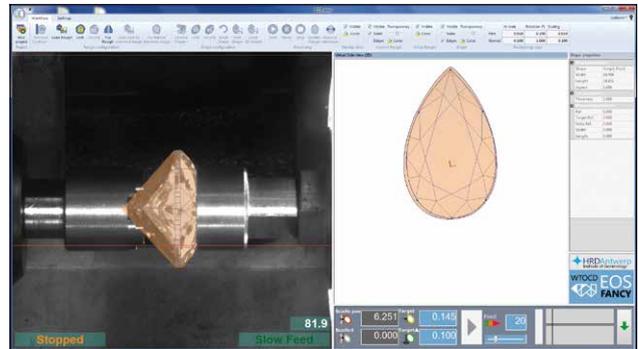


Figure 1: illustrates the movement of the disk during the bruting process, forming the contour of a pear shape.



Screenshot 2: all fancy shapes can be bruted by EOS Fancy.



Photo 2: special designed pots to fix fancy shapes.

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To brute the stone, a special composition of the diamond scaife is used. The scaife moves in cooling-liquid to cool down the bruted stone. The liquid contains some special conditioner; this facilitates the bruting process.

The scaife consists of diamond grains combined with a binding agent. When the grains wear off during the bruting process, the binding agent releases the worn off grains and lets new grains surface. The composition of the scaife guarantees an equilibrium between wear and productivity. And the cooling liquid too contributes to this process.

During this process the diamond travels parallel to

its rotation axis. The travel range can be set so the girdle surpasses the scaife at both sides, which guarantees an equal wear of the scaife.

The plunjer is only being used to do a pre-centring of the stone. The centring of the diamond for bruting fancy shapes is completely taken over and executed by the machine software.

EOS Fancy can be operated manually or through a rough scanner transfer. In the manual mode, the rough stone is measured by the measuring probe (see photo 3 & 4). The parameters setting and the position of a desired shape has to be introduced in the software via the screen menu.

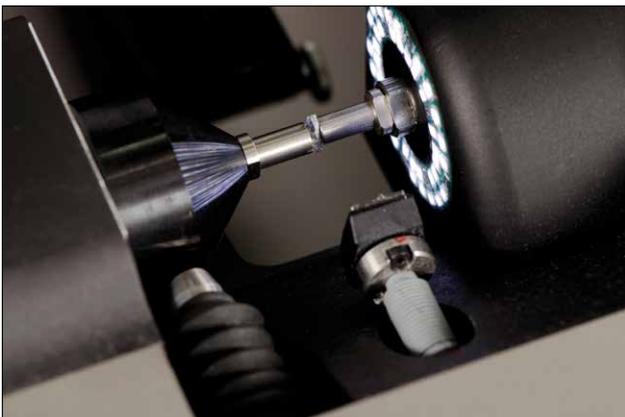
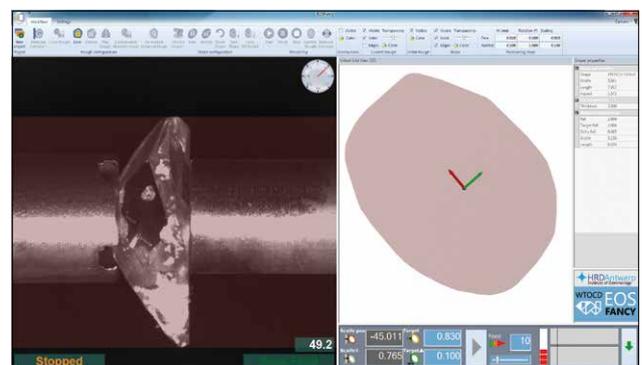


Photo 3 & 4: the rough stone is measured by the built-in measuring probe.



In the transfer mode, the 3D models of the rough stone and the optimized fancy shape are exported from the planning software of the rough planner to Eos Fancy. The operator then only has to align the rough scanner model to the actual rough in the Eos Fancy machine. The fancy shape coupled to the 3D-representation of the rough is centred automatically and bruted after a simulation of the bruting process.

Transfers from all major producers of rough scanners to Eos Fancy are supported.



Screenshot 3: the measured rough stone is visualised on the right side of the screen.

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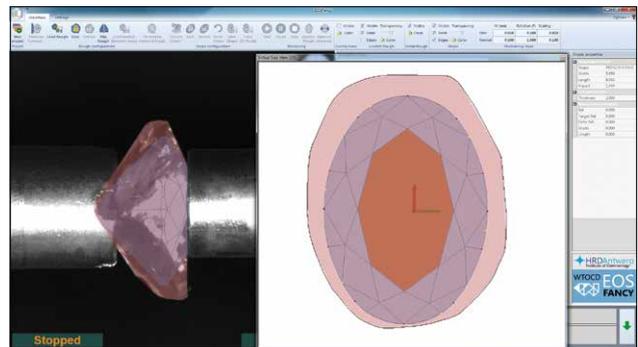
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The process is constantly monitored and is interrupted as soon as the wheel load is too high. Once the desired proportion is reached, the machine stops automatically and waits for further action of the operator.

The whole process is controlled through the EOS control software on the PC.

The machine guarantees a vibration-free cutting process.

Eos Fancy was designed focussing on superb girdle quality, productivity, functionality and ergonomics.



Screenshot 4: a 3D file from a rough planner is imported in EOS Fancy.

What you need to know about your Eos Fancy

The benefits of Eos Fancy

- All convex shapes and therefore all fancy shapes can be bruted
- Perfect symmetry of the girdle – the maximum symmetry deviation is limited to microns
- Straight girdle
- Very high accuracy of desired shape
- No beard risk
- No facets outbreak
- Risk stones can be bruted
- Complementary process to laser shaped stones
- Facilitates polishers' work

The transfer method from rough scanners and planners, the use of high technology and the ergonomic control will allow you to:

- Reach a very high productivity; 1 person can operate more machines
- Minimise the training period
- Avoid damage to the stone while processing

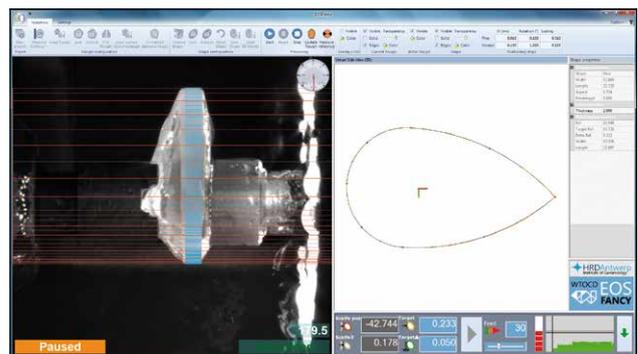
Eos Fancy characteristics

Machine

- Dimensions: L 605 x H 640 x D 640 mm
- Weight: 80 kg
- Temperature: min. 5° - max. 30°

Feeding

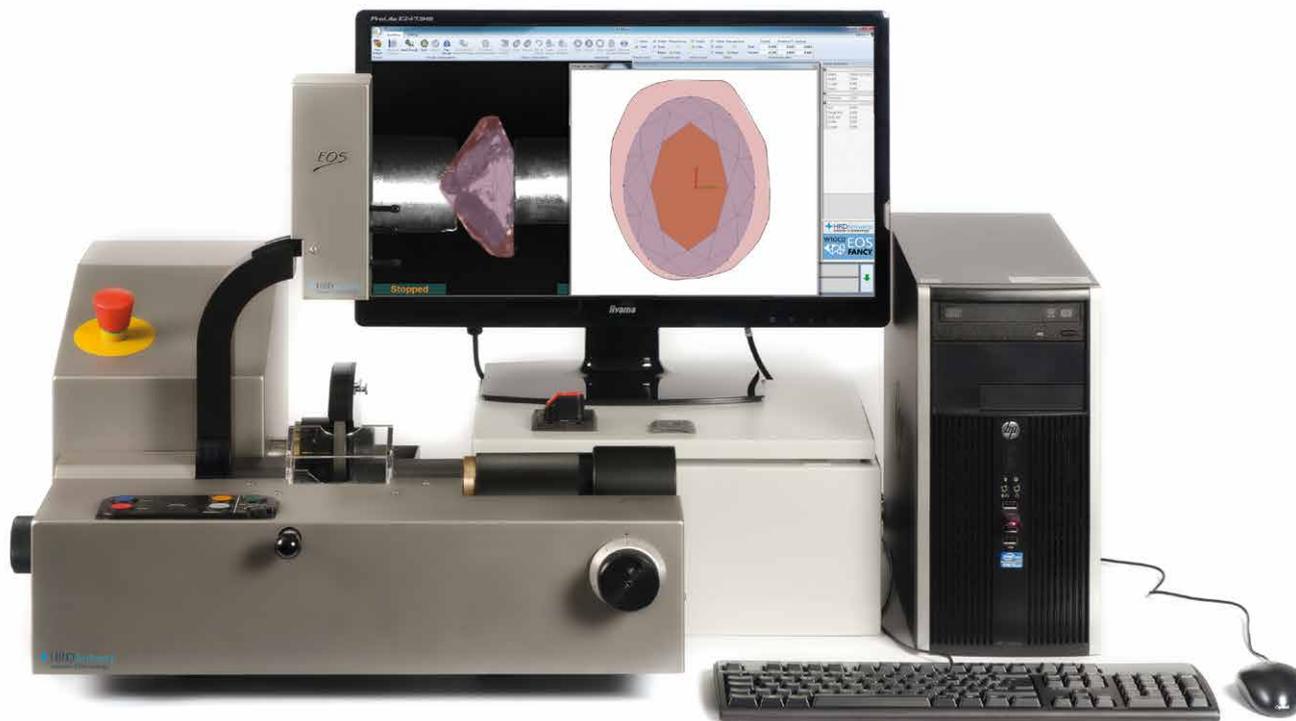
- Dimensions: L 300 x H 400 x D 190 mm
- Weight: 15 kg
- Voltage: 230V - 50/60Hz



Screenshot 5: a perfect girdle by EOS Fancy.

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