

A New Standard of Quality: The Hearts On Fire Standard

A new era begins in 2012: All loose diamonds crafted and supplied by Hearts On Fire will be issued with a revised Diamond Identity Document embossed with the new Hearts On Fire seal of quality.

Where is this change coming from?

16 years ago, Glenn Rothman, the Founder of Hearts On Fire envisioned and orchestrated a paradigm shift where the diamond buying and selling experience at the retail counter would be changed forever. He and his partners embarked on a quest to develop diamond cutting technology to produce a diamond that would surpass industry standards that had been established by the AGS Lab that same year (the AGS lab rose to prominence in 1996 by creating the first scientifically reviewed, objective, and repeatable cut grade method in the industry).

Proprietary diamond cutting technology and methodology was applied in the form of digital imaging (100x magnification – 10x the industry standard) and a unique, vibration-free environment...and, thus, the Hearts On Fire diamond was born. It's perfect proportions, symmetry and polish attained using this technology quickly gave rise to the value proposition, "The World's Most Perfectly Cut Diamond" – the only diamond in the industry that can make this claim.

This quantum leap in technology did not go unnoticed by the industry, and the exclusive Hearts on Fire diamond quickly became a new, high-quality standard by which all diamonds in the diamonds would be judged. However, as Hearts On Fire diamonds were supplied to a discerning and select number of retailers, the Company realized that its AGS-graded Diamond Quality Documents did not address or give credit to the exponential leap in technology and innovation that has made Hearts on Fire a global brand.

To meet the industry-leading and extremely high standards of Hearts On Fire, it is undisputed that a hallmark of quality must apply to every aspect of the manufacturing process as defined in the competencies listed below. This includes all aspects from the responsible sourcing of the rough (Kimberley Process compliant) through the manufacturing process, and all the way to delivery.

(Please note, strict Standards and requirements are enforced throughout the manufacturing process. Systematic documentation and inspections are verified at each manufacturing step.)

Selection of rough Crystals

Quality control standards ensure that only natural diamond crystals that have absolute optical pellucidity (transparency) will become Hearts On Fire diamonds. The octahedron crystals have to be free of any anomalous characteristics such as atomic dislocation, twinning, knotting or any surface aberration that would interfere with the propagation and transmission of light in the finished diamond. This results in only the smallest fractions of all rough diamonds in the world (about .002%) fitting this criterion, and, therefore, meeting the Hearts On Fire standard of quality.

Designing and marking

The designing and marking of the rough for the sawing process has benefited from the technology revolution with interface between computers and measuring devices.

To complete this process, an image of the rough diamond is scanned into a computer that creates a 3D model that calculates with mathematical accuracy which direction the diamond should be cut in to maximize its performance. A laser then transposes a line onto the crystal that leaves no margin for error during the sawing process.

Sawing

Sawing the crystals is a mechanical process accomplished by attaching the rough diamond to a mechanical arm and lowering it onto a high-speed rotating phosphor bronze blade in perfect alignment. This alignment of diamond and blade is guaranteed by the marking phase described in the previous paragraph.

The thickness of the blade and the amount of pressure that is applied is precisely calculated by the weight of the individual diamond and adjusted accordingly. The sawing benches are constructed of a special combination of composite materials for the sole purpose of removing vibration- thus more precision.

Regular diamonds take about four hours per carat to saw – however, the extra attention to detail takes Hearts On Fire diamonds six hours per carat to saw.

Girdling

Also known as “rounding up,” the purpose of girdling is to create the edge that separates the crown and pavilion on a finished diamond. Whereas the thickness of the girdle controls durability (thin girdles are susceptible to chipping) – it is the roundness that ultimately controls symmetry.

For example, the pavilion mains on a round diamond with little or no variance in roundness can all be cut to the same depth into the girdle, at precisely the same angle, and come to a perfect point with the culet exactly in the center of the diamond. The same can be said of the bezel facets on the crown and the table being exactly centered.

This variance is calculated by the laboratories (GIA, AGS, IGI and EGL) by measuring the maximum and minimum diameters in millimeters with a variance of 1/10th mm deemed acceptable e.g. 6.50 mm – 6.60 mm. Clearly these measurements cannot produce perfect symmetry as either the culet or the table (or both) would have to out of center to compensate for the lack of roundness. On the other hand, Hearts On Fire’s use of proprietary girdling equipment produces results with variances of 3/100th mm resulting in near perfect symmetry.

(Note: It is impossible to produce perfect roundness in earth’s atmosphere because of the effects of 14lbs per sq inch of gravity on the machinery...we’d have to produce diamonds in space to achieve perfect roundness.)

Faceting

In the process of diamond cutting, there are five repeatable facet sequences. They are listed in the order in which they are produced, including:

1. 8 pavilion mains
2. 8 Bezel facets (crown)
3. 8 pairs of upper girdle facets ($8 \times 2 = 16$)
4. 8 pairs of lower girdle facets ($8 \times 2 = 16$)
5. 8 star facets

During the orchestration of these five sequences, Hearts On Fire employs the use of cutting techniques that include the use of vibration-free micro balanced wheels, digital imaging with on screen templates at 100x magnification and the use of other proprietary methods to achieve a level of perfection that goes far beyond the industry standard of 10x magnification. Each individual facet within these five categories is inspected and measured according to very specific criteria for proportion (angle), symmetry (size) and polish and the competencies are recorded and documented.

The sole motive of these measures is to achieve the greatest possible efficiency in the transmission of light resulting in unbridled brilliance (brightness), dispersion (colorfulness) and scintillation (sparkle).

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