

# RUBY AND SAPPHIRE CUTS

Rubies and sapphires should be cut to retain as much weight as possible, while still aiming to retain brilliance and a pleasant shape. The GAA's **KATHERINE KOVACS** reports.

Rubies and Sapphires belong to the same gemstone family, corundum, which is the mineral name for crystalline aluminum oxide. As they both have the same basic chemical composition, their physical characteristics are very similar; however, the presence of small amounts of various trace elements creates noticeable differences in colour.

Ruby is red corundum while sapphire can be all the other colours in which corundum can occur – blue, pink, green, yellow, orange, purple and others. As they share the same physical characteristics, a similar approach is taken to both when cutting, although differences in the shape of rough material from various locations may mean the lapidary must take into account various other considerations.

Perhaps more than any other type of coloured gemstone, rubies and sapphires are predominantly cut to retain as much weight as possible, while still aiming to retain a pleasant shape. Weight is important because fine rubies and sapphires at the higher end of the market can command prices in the thousands – if not tens of thousands – per carat. Unfortunately, this tendency often leads to stones that are disproportionately deep or overly shallow for their girdle size, and therefore lack brilliance due to light not being reflected up through the crown of the cut stone.

A well-cut stone should have

pleasing proportions, good internal reflection and a symmetrical girdle regardless of the shape.

In countries such as Sri Lanka, India and Myanmar, traditional methods of cutting to maximise weight are often referred to as “native cut”. A native-cut stone typically displays an over-heavy bottom and when viewed “face up” has little or no light reflected from the centre of the stone, creating a window. The edges around the crown may be quite dark when compared to the centre; these dark parts of the stone are called “extinction” and while a little extinction can be good – and is arguably unavoidable – too much extinction detracts greatly from the overall beauty of the stone.

Native cut stones may also have irregular facets, or tables that are crooked or just plain asymmetrical; however, some native-cut stones can be beautiful if they are not too heavy and without too much of a window or extinction. Because they are not cut in the modern fashion, such stones are commonly sought after as replacement stones for the antique trade, or used in the manufacture of reproduction antique jewellery.

At the other end of the scale, the most uncommonly-encountered cut in rubies and sapphires is the round-brilliant cut. This is because rough material often has to be sacrificed, thus significantly increasing the price of the finished stone. In a mixed-round-cut stone – step-shaped facets on the

pavilion and brilliant-cut facets on the crown – the cutter is able to slightly round out the bottom of the stone for a bit of weight retention, whereas the brilliant cut always requires a greater number of facets and little to no rounding out.

Other cuts that produce poor weight retention in ruby and sapphire, and are therefore often more difficult to source, are princess and other square cuts. For rubies in particular, sourcing stones above five millimetres in round, square and, most especially, octagonal cuts – whether they be brilliant or mixed – is difficult and costly when compared to similar quality material in an oval or cushion cut. To a lesser extent, the same principle holds true for sapphires, though these shapes are still generally easier to source in sapphire than in ruby.

Cabochon cutting in rubies and sapphires is generally reserved for rough merchandise that has too many inclusions to create a desirable faceted stone. This is also the case with other gems. Some rough may display a lot of “silk-like” inclusions; in ruby and sapphire, the silk may run parallel in six directions and is made visible on the crown of the finished product when orientated correctly during the cutting of a “star”.

For jewellers and setters, rubies and sapphires should generally present very few problems. They



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are tough stones, right behind diamonds on Moh's scale of hardness, and are therefore suitable for all types of jewellery, including engagement rings.

As with other gems, care has to be taken if there are any surface-reaching fractures but jewellers should also be on the look out for stones that have liquid-filled inclusions. Although rare, these inclusions can cause extensive damage when under heat.

Finally, never allow corundum to be heated in the presence of borax or other fluxes, as the polished surface can be easily “etched” or otherwise suffer damage that can only be removed by repolishing ♦