



# Grading Diamonds

by Raffi Katz

After selecting an electronic diamond tester a customer will often ask, *Will it also tell me the quality?* The answer is *no*. A diamond tester will distinguish diamond from non-diamond, it will not tell you the quality or anything else about the diamond. Diamonds are graded according to what is known in the trade as the 'Four C's, that is their colour, clarity, cut and carat weight. Commencing with **colour** diamonds are graded on a scale from D, which represents perfect white down to Z which is quite definitely dark yellow, brown or grey. Machines that measure colour (colourometers) exist but cost thousands of pounds.

**Clarity**, too, has a grading system. It is extremely rare for a diamond to be 'flawless'. There are nearly always bits of non-diamond inside it which are called inclusions. To examine a diamond for inclusions a 10x jewellers loupe will suffice but with very small diamonds it is virtually impossible to grade them in this way. The very highest grades are VVS1-VVS2 which are extremely difficult to spot by an expert even with a loupe. VVS means very very slight or small. The next range is VS1-VS2 which are very slight inclusions and can be still quite difficult to see. SI1-SI2 will show noticeable inclusions, relatively easy to see and then grades I1-I3 represent inclusions 1 to 3 which are obvious when viewed through the loupe and may even be visible to the naked eye. There is no machine that can measure clarity. Evaluating colour and clarity is a question of experience. Ideally, working in the trade and handling diamonds every day will bring competence. There are courses run by the *Gemmological Society of Great Britain*, which include a one-day introduction course or a five-day 'practical'.

The third 'C' stands for carat weight and this is something which we can measure. Diamonds are measured by weight: 100 points (pts) = 1 carat (ct), 5ct = 1g (gram). Since the basic unit is the gram, carats are often referred to as 'metric carats'. This is not to be confused in this country, with 'carat' as a measure of the purity of gold. The only way to 'measure' a diamond accurately is to weigh it. Choose a weighing machine that weighs down to 0.001g and can display the weight in carats. There is one problem. Most diamonds are to be found set in jewellery and you would probably not want to pull the diamond out to weigh it. There is a solution. Diamonds are cut to standard proportions, so you estimate its weight from its size by using gauges. Find the nearest hole that represents the widest diameter of the diamond to include both its *table* and *crown* and then simply read the size printed on the gauge. The answer is approximate since you have not weighed the diamond nor have you measured its depth. This type of gauge is often called a 'spread gauge' because it measures how much the stone appears to 'spread out' rather than the weight.

One step up from this is to measure not only the diameter of the diamond but also its height (depth) using a miniature calliper gauge. The original German brand was called a Moe (pronounced Mow-ee) gauge. You measure the diameter of the diamond then you measure the height (depth), then you look up the measurements in a tiny pocket book. A 'Moe' gauge is more accurate than a simple diamond gauge, but it is still only a method of estimating the weight. These cost between £20 and £30.

One step up from this is the digital diamond gauge. It is the same as a Moe gauge but the measurement appears on a digital display. In place of a book of numbers, there is a formula for calculating the weight from the measurements and there are also formulae for fancy shapes (cuts) of diamond and for other gemstones. All you have to do is provide your own calculator. Cost: £35 to £49. Finally, there is the king of diamond gauges, just like the one illustrated where you don't have to get out your calculator and follow a formula, you enter all the figures directly into the gauge. These retail at about £300.

Do remember that every diamond gauge, no matter how sophisticated, will merely estimate the weight of a diamond from its size. The only way to find the true carat weight is to actually find its weight in grams and then apply this to the arithmetic provided at the outset. Hence for example if a loose diamond weighs 0.2 of a gram then this equates to one carat. Or if a loose diamond weighs 0.1 gram this equals 0.5 carats or 50 points.

At [www.quicktest.co.uk](http://www.quicktest.co.uk) you can find a longer version of this article and you can also see a large selection of diamond gauges and weighing machines.