

CHARLES & COLVARD®

The Original Created Moissanite™

BENCH GUIDE

CHARLES & COLVARD CREATED MOISSANITE® HAS A HARDNESS OF 9.25 – 9.5 ON THE MOHS SCALE AND THE TOUGHNESS IS SIMILAR IN NATURE TO SAPPHIRE AND RUBY. THE GEM IS CREATED IN A VARIETY OF COLORS: COLORLESS, NEAR-COLORLESS, LIGHT GREEN, DARK GREEN AND CAN BE COLOR TREATED TO ALMOST ANY COLOR. THE FOLLOWING COLORS HAVE BEEN CREATED: BLUE, YELLOW, PURPLE, PINK, RED, GREEN, BOURBON AND ORANGE. THE FOLLOWING ARE GUIDELINES FOR WORKING WITH MOISSANITE.

Ultra-Sonic Cleaning and Steam Cleaning: When ultra-sonic cleaning mounted white or natural green moissanite, it should not have any problems in a hot, warm or cold tank. If you are cleaning multiple loose stones together in the ultrasonic cleaner, the vibration and bouncing of the stones against each other will scratch them. When cleaning jewelry with color treated gems in the ultrasonic, the solution should be at room temperature to prevent removal of the color treatment from the stone. The use of a steam cleaner on moissanite will not harm the stone. Color treated stones should be steamed six inches from the end of the nozzle – any closer may cause damage to the color treatment on the pavilion of the stone. Once the jewelry has been cleaned and the dirt is removed, you may see on the stone are blue or brown spots or an oil slick type sheen. This film is very difficult to remove with the standard cleaning method as listed above. To remove this film, we recommend a heated beaker with a magnetic stirrer that can maintain a temperature of approximately 190 to 200 degrees. The cleaning product we use is Shine Brite made by **Myxis** – which can be found at most jewelry equipment suppliers. In most cases, the piece will need to be suspended in the solution for about 45 minutes to an hour. You will then rinse the cleaning solution off the piece and steam.

Repairs and Sizing: General repairs and ring sizing may be done with white or natural green moissanite in place, but let the piece cool slowly. **Do not quench jewelry set with moissanite!!!** The color treated stones must be removed from the mounting or **extremely well protected from heat** to prevent the color treatment from being removed from the pavilion of the stone. Be sure the jewel is thoroughly cleaned as any dirt or other contaminants will cause permanent spots on the stone when heat is applied to the jewelry.

Re-Tipping: When heating the jewel for re-tipping it will turn yellow and then dark orange in color, but will return to its original color when allowed to cool slowly. The jewel should not be held at a high temperature or at a dark orange color for more than a few seconds because it may alter the color of the stone. Repairs should not be made with a high temperature solder around the stone, such as a 19K weld or platinum solder, because this can cause fracturing to occur or burnt spots to appear on the stone. If there are a number of prongs being re-tipped in a small area, only work on 3 prongs or less at a time. Let the piece cool and pickle it before you continue with re-tipping the piece. When re-tipping on silver this procedure is a must. You may observe stones set in silver and gold jewelry take on a tan or brownish color. This means the piece will need to be pickled longer, sometimes taking up to eight hours. If the stone takes on a milky look and has lost its fire, it has been damaged by too much heat and will need to be replaced. No color treated moissanite can be re-tipped with the stone in place unless a laser welder is used. The heat of a torch will remove all color treatment.

Acids: White and natural green moissanite may be “pickled” to remove fire scale. Color treated moissanite cannot be put in a hot “pickle”. It will remove some or all of the color from the stone, turning it back to its natural color before treatment.

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Polishing Colorless & Natural Green Moissanite: Silicon carbide sanding discs, drum sanders and wheels impregnated with silicon carbide should not be used around the stone as they can cause scratching to the gem. Do not tumble polish jewelry with any stones that are set, as this will cause scratching to the stones. Tumbling will also remove all color coating from the all color treated moissanite.

Polishing with Color Treated Gems Set in Mountings: When polishing a mounting with a color treated stone, care must be taken to not let any type of polishing wheel or bristle brush touch the pavilion of the treated stone. If a buff or silicon wheel of any type is used, it must only be used on the metal. If it touches the pavilion of the stone, it will remove some of the color treatment. Because of the nature of these stones, it is strongly recommended that the mounting be polished before the stone is set, so only the tips of the prongs need a light polish with a felt wheel.

Plating: Charles & Colvard has done two types of plating, rhodium plating of gold and “Platineve” plating, which is a coating of platinum, palladium and rhodium plating on silver jewelry. There are several plating solutions, electro cleaners and acid activator manufacturers, and we do not recommend any brand. What we do recommend is that you read and follow all safety requirements by the manufacturer when using any plating product. This is for your safety.

Colorless and natural green moissanite can be plated without any issue to the stone. A color treated stone set in a mounting can only be put in electro cleaners, acid activators and plating solutions at room temperature. All products used in the plating process will damage color treated gems if the solutions are above 90°F. Even with these precautions, there is still a high risk the color will be removed from the stone.

Setting: Certain techniques are recommended when setting moissanite. Created moissanite has cleavage directions that will cause the stone to cleave parallel to the girdle of the stone, and it can chip. Care should be taken with the girdle when setting, so that there is no crowding against other stones as this will cause chipping.

Moissanite is a tough material that is not easily prone to damage. Special care should be given where sharp points and thin girdles are concerned, as chipping may occur. The sharp points on the radiant, princess and marquise cuts must be protected against unnecessary pressure. When a seat or bearing for such stones is cut, a small indentation should be drilled where the points of the jewel will rest. This will allow setting pressure against the sides, but will avoid pressure against the points. A small drill bit or ball burr is ideal for this job. Be careful not to drill through the back of the prong. If you are currently using 70 degree bearing cutter burs, try 90 degrees instead. This angle is more parallel to the jewels pavilion and may also prevent breakage on the girdles.

Prong Work: When bearings (seats) are properly made in each prong the jewel should pose no problem. In setting with pre-cut bearings, you must be sure the lower section of the bearing is parallel with the pavilion facets of the stone. If not, it is a simple matter to shape the lower part of the bearing so that the stone fits into it instead of being pushed up against a curved edge. In such cases, the point of contact acts as a fulcrum and even slight pressure may chip the girdle. Look at the contact between the jewel and the bearing. If there is an open space next to the girdle, then the bearing's bottom edge needs to be adjusted.

Hammer Work: If bearings are properly cut, you may use your electric hammer to move metal above the girdle on the jewel. Trimming the excess metal on the inside of the prongs with a graver should not pose any problems. Burnishing should be done on the metal over the jewel, not against the jewel.

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Trimming Metal Prongs: If you use abrasive wheels to trim prongs after setting, you must be sure the wheels are made of rubber (not stone) and do not contain either silicon carbide, carborundum and/or diamond abrasives. These will scratch the jewels on contact and require re-polishing of the scratched facets. If the wheels are made of hard rubber, avoid contact with the girdle of the jewel. Your tool supplier should be able to supply information regarding the abrasives in the rubber wheels you are using. If you use files to trim prongs, avoid passing the file over the sharp facet edges or the girdle edges as they can chip the jewel rather than scratch it. One way to avoid the rough file catching on a stones' edge is to use a three-corner file and grind down and polish the corners. This will allow you to trim the inside of a prong with the file, while only the polished corner edge is touching the stone.

Bezel Setting: When bezel setting these cuts, the entire bezel must be level and clear of burs. If setting a square shaped stone, the corners should be drilled and the angle at the bottom of the bearing should match the angle on the pavilion of the jewel. Push downward on the metal, making sure it forms over the edge of the crown, thereby closing the bezel. Do not push the metal *into* the edge of the stone to close the bezel. This may cause chipping of the girdle.

Bead Work: Girdles should be fitted slightly below the metal surface and beads should be raised above the girdle rather than against it. Girdle edges on moissanite may chip if direct pressure is applied against them. When rounding a bead with a beading tool, the edge of the tool should not touch the stone because it can cause chipping or breaking.