

## **THE QUALITY OF STEEL**

Quality knives require a very specific grade of steel to insure proper forging, tempering and hardening. CCI Superior Culinary Master knives are made of the finest quality, high carbon stainless to ensure the durability, strength and longevity of the blade, as well as resistance to rust and corrosion.

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## **THE FORGING PROCESS**

The way in which the knife is forged and tempered is as important as the quality of the steel used. Forging is the process of heating the steel to a red-hot stage then drop forged with a powerful blow to form the forged blank.

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## **STRIP STEEL vs. FULLY FORGED?**

Strip steel manufacturing is one of the most common methods of making knives. This simple and less costly method produces a knife that is punched from steel that is ordered and supplied to specifications. Strip steel knives in many instances are produced in ultra modern cutlery plants today using the latest in CNC grinding machines and robotics and require less human intervention in their production. By producing knives in this manner, there is more quality consistency and a substantial cost savings that can be passed on to the consumer. Hardening and tempering can be more consistent with today's modern methods. Therefore, Forged knives today once considered the best are more a personal preference in style.

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## **MAKING A STAMPED OR FORGED KNIFE, THE PROCESS**

### **THE STAMPED KNIFE**

The blade or blank as it is known is cut from a sheet or strip steel of high carbon stainless steel.

Rivet holes are punched into the tang or handle area of the knife.

The blank is heated to red hot, and then hardened, tempered by re-heating and various other means such as ice tempering. Specialized techniques, like Ice tempering, creates a hardened blade that will help sustain its sharpness for prolonged periods and give the desired effect for easy re-sharpening.

Blades are then put into grinding machines to give them the correct V type shape.

Ground blades are then cleaned and dried ready for Trademarks and Logos.

Handles are produced and assembled onto the blades.

Then the final handle finishing and blade edges are placed onto the knives

The final steps are quality inspection and packaging.

### **THE FORGED KNIFE**

The primary stage blank is cut from strip steel of high carbon stainless steel.

## **THE FORGED KNIFE - continued**

The blank is heated to a red-hot stage and drop forged, usually the 6-10 ton hammer will strike the steel about three times.

A tool dye used for trimming excess hammered steel from the forged product creating the initial forged blank.

Holes are drilled into the tang for the rivets.

The forged blank is re-heated to red hot, and then hardened, tempered by re-heating and various other means such as ice tempering. Specialized techniques, like Ice tempering, creates a hardened blade that will help sustain its sharpness for prolonged periods and give the desired effect for easy re-sharpening.

Blades are ground individually to refine the taper and produce the final form of the quillon/guard and bolster.

The handle is attached and riveted with special compression rivets and the blade is ground to its final shape.

Ground blades are then cleaned and dried ready for Trademarks and Logos.

Final steps include sharpening, honing, cleaning and finally packaged.

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## **HOLLOW GROUND AND/OR TAPER GROUND?**

Usually a knife that is hollow ground is not produced with a V ground type blade. These knives are usually produced with cheaper steel and with the intention of maximizing how long a knife will last due to numerous re-sharpening. A high quality knife most likely will not be produced in this manner. The disadvantage of a hollow ground knife is that it will eventually become impossible to sharpen manually and will require professional machining. The blade shape also promotes more difficulty in cutting through a large piece of meat.

Taper ground edges or V grind is long lasting, easier to re-sharpen and enables basic sharpening tools to be used allowing you to bring the knife back to its original high quality sharpness.

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## **SAFETY & HYGIENE**

Be sure to purchase knives that meet International food safety Guidelines and Regulations with regard to hygienic and safety standards. Knives that are ergonomically designed (see CCI's Ergonomic Plus Series) allow for comfort and safety. There are various handle textures available and finishes provide the utmost resistance to food bacteria, stains, rust and safe handling when in a professional environment.

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## **THE RIGHT KNIFE FOR YOU!**

CCI has a large selection and we will be pleased to help provide you with the right knife for a specific purpose. This will ensure a safe kitchen environment, precise cutting with the least effort and efficient cutting.

Please visit our web pages to view our selection or call 1-800-698-8277 for customer support.

## **GLOSSARY**

### **Rockwell**

Rockwell hardness testing is a general method used for measuring the bulk hardness of metallic materials. Hardness testing does not give a direct measurement of any performance properties, hardness correlates with strength, wear resistance, and other properties. It is widely used for material evaluation due to its simplicity and low cost relative to direct measurement of many properties.

Rockwell hardness testing is an indentation testing method. Common regular Rockwell hardness scales include B and C for metals and M and R for polymers. An indenter such as a diamond is impressed into the test sample at a prescribed load to measure the material's resistance to deformation. A Rockwell hardness number is displayed from the depth of permanent deformation of the sample after application and removal of the test load. It is then determined by the numbers the degree of hardness – the higher the Rockwell number, the harder the blade is. Depending on what the blade is to be used for determines how hard to temper. For example, a quality chefs' knife should be in the 54 – 58 range. Any softer than 54 usually means the blade will not sharpen very well or will not hold its edge very long

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### **The Bolster**

The raised thick part between the blade and the handle is called the Bolster the bolster usually distinguishes the knife as fully forged. The bolster acts as a guard providing safety balance, sturdiness, and comfort.

Beware of companies that manufacture knives with an imitation bolster as these knives are invariably cheaper in quality compared against a "one piece fully forged" knife.

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### **Tang**

The portion of the knife blade that becomes the handle. There are many shapes but these are dependant on what will be done with the knife. For example an injection molded handle requires a completely different shape compared against the requirement for a full tang handle.

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### **Forge**

A Forge or large oven is required to heat the metal thus allowing the ability to shape it by hammering.

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### **Drop Forge**

The process in which heated metal is formed by a powerful strike from a hammer.

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### **Temper**

The process in bringing metal to the required degree of hardness and elasticity by heating then cooling.