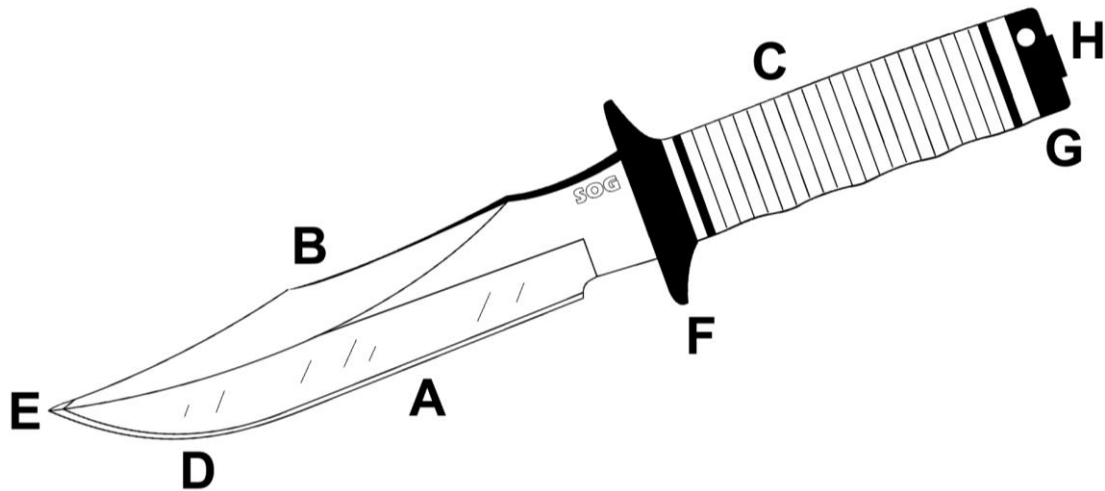


KNIFE BUYING GUIDE

When purchasing a knife, the first question you may ask yourself is “what kind of knife do I need?” In order to make that determination you should know how the knife will be used. If you are looking for something to use while on a day hike, a folding pocketknife would be sufficient. If you are going on a weekend camping trip, a larger fixed blade might be more appropriate. Lastly, there are multi-tools that can be carried for everyday use.

Glossary of Terms:



A. Edge

The sharpened part of the blade, from point to bolster (E to F). The edge can be either straight, serrated, or a combination of the two.

B. Spine

The side opposite the sharpened edge is referred to as the spine.

C. Handle

The handle envelops the tang (H) and is usually fastened by rivets or encased in plastic or metal.

D. Tip

The third of a blade's tapered end, opposite the handle

E. Point

Located at the tip of the knife, the point should be sharp and relatively thin. It is used for making incisions, cutting, and carving.

F. Bolster

A thick piece of metal between the handle and the blade that is typically found on fixed blade knives. It is made to add weight to the knife, provide it with better balance, and create a comfortable resting place in the hand. It is sometimes called the shank.

G. Butt or Pommel

The butt or pommel end of a knife is located opposite from the tip at the end of the handle.

H. Tang (not pictured)

The part of the blade that runs from the bolster back into the handle is known as the tang. There are two types of tangs. A full tang runs the entire length of the handle while a half tang only runs a partial extent of the handle. Higher end knives generally have a full tang.

Blade Steel

There is a saying that the heart of a knife is its steel. Although steel is very important, it is not the only factor in determining the performance of a knife. Other considerations are heat treatment and blade shape/profile. There are various levels of quality in knife steel. Most modern knives are made using stainless steel.

Stainless steel is a steel alloy with a minimum of 11% chromium content by mass. By varying the amount of chromium and carbon in the make up of the steel different properties can be achieved.

Below is some basic information on the grades and characteristics of different steels:

Good

These entry-level stainless steels are typically made in Asia, typically China, and are some of the least expensive available. They have an adequate edge holding ability and are rust resistant. These steels tend to be softer compared to higher grade steels and require more frequent sharpening to maintain the best performance.

Examples:

420

440A

8Cr13MoV

Better

Better grade stainless steels are slightly more expensive, are typically made in Asia, typically Japan, and the U.S., and have higher chromium content. They offer greater edge holding ability and require less maintenance than entry level grades of steel. Sharpening is relatively easy and can be performed anywhere using appropriate techniques. These steels offer a great combination of value and performance making them perfect for everyday use.

Examples:

AUS6

AUS8

440C

Best

The best stainless steel is typically made in the USA and Japan. They tend to come with a cost premium and high chromium content. Additional elements, such as molybdenum, are added to provide superior edge sharpness and retention, as well as enhanced rust resistance. These steels are difficult to sharpen but require sharpening less frequently making them ideal for more demanding uses. They are typically made in the U.S. and Japan.

Examples:

CPM 154

S30V

VG-10

Details regarding different steels:

AUS-8 and AUS-6 are Japanese made high carbon, low chromium steels that are a good compromise between toughness and strength, edge holding ability, resistance to corrosion and cost.

440A and 440C are high-grade cutlery steels, with high amounts of carbon allowing for better edge retention when properly heat-treated. The steel can be hardened to approximately Rockwell 58 hardness. Due to its toughness and relatively low cost, many knives are made of 440 stainless. 440A contains the least amount of carbon and is the most stain-resistant; 440C contains the most carbon, is stronger, and is usually considered more desirable in knife making than 440A, except in salt-water applications.

VG-10 is a unique formulation of steel with a high carbon content and contains various amounts of one or more of the following: Chromium, vanadium, molybdenum and cobalt. The steel is specially designed for high-quality blades used in cutlery. VG-10 is often called the "super steel" because it is designed to maintain sharpness and durability without becoming brittle, a major fault normally associated with exceptionally hard steel. This quality is ideal when extreme sharpness is desired, as most other steel will not take or keep an edge like VG-10.

CPM S30V is a powder-made stainless steel that was developed by Crucible Materials Corporation for its wear and corrosion resistance. Its chemistry promotes the formation and even distribution of vanadium carbides, which are harder and more effective at cutting than chromium carbides. In addition, vanadium carbides give the steel a very refined grain, which further contributes to the sharpness and toughness of its edge.

154CM is an American made premium grade stainless steel originally developed for tough industrial applications. It combines three principal elements: carbon, chromium, and molybdenum. Re-sharpening can require extra effort but is needed less often. Known for its best all-around qualities, it offers great corrosion resistance with good toughness and edge quality.

D2 is a high-carbon steel alloy commonly used in knives and tools.

8Cr13MoV is a Chinese stainless steel with a high performance-to-cost ratio, often compared to AUS-8. Tempered around the Rc56 to Rc58 range.

san mai is normally encased in layers of steel providing greater corrosion-resistance, leaving only the "super steel" exposed at the edge for fine cutting.

Handle Materials



Zytel is a high strength, abrasion and impact resistant thermoplastic polyamide formulation of the family more commonly known as nylon, often with varying degrees of fiberglass, from 13% to 60%, added for additional stiffness. Zytel also offers chemical resistance to common chemicals such as motor oil, transmission fluid, and methanol. Zytel allows little thermal expansion.



Aluminum is a precipitation hardened aluminum alloy containing magnesium and silicon as its major alloying elements. It has good mechanical properties and is one of the most common alloys for general purpose use. It is typically anodized to offer extra protection and color.



G-10 is made up of extremely durable layers of fiberglass soaked in resin. Those layers are then highly compressed and baked, which makes them impervious to moisture or liquid and physically stable under climate change. It is most commonly black but is available in various colors.



Carbon Fiber is a modern composite made from thin layers of carbon strands that are tightly woven and then cured under high pressure in resin. This makes for a very strong and lightweight material.



Micarta is created from soaking layers of linen cloth in resin and then pressing them together, much like carbon fiber. It offers great color and finish properties.



Kraton is a synthetic replacement to rubber; it offers many of the same properties of natural rubber, such as flexibility, high traction, and sealing abilities, but with increased resistance to heat, weathering, and chemicals. Typically, it is over-molded on the knife handle to provide added grip.



Natural materials include bone, wood, leather and more. They offer a more traditional look to the knives. These are typically applied directly to the liners of the knife.

Blade Shape



Drop Point is a pattern used on many knives but is most popular on hunting knives. The tip is lowered (dropped) via a convex arc from the spine. This lowers the point for greater controllability. The point retains a great deal of strength. Most drop point patterns also retain plenty of belly. Due to the very controllable point, this pattern is very popular on hunting knives. The strong point holds up to heavy use, this format is popular on utility and combat knives. The tip on a drop point will be stronger but not necessarily as sharp as a clip-point.



Clip Point is a great all-around format and one of the most popular. It is used on most bowie knives. The format has a concave or straight cut-out at the tip. This "clip" makes the point sharper and also lowers it for more control. As a result, this format is popular on a wide range of applications from utility and camp knives to combat and hunting knives.



Sheepsfoot blades really can't be said to have a point. The spine curves down to meet the edge. The objective of this format is to provide an edge that can be used for cutting, while minimizing the chances of anything delicate being accidentally pierced by the point. For example, it is marketed to emergency personnel who may have to cut a person out of their seatbelt at an accident scene and don't want to risk puncturing the victim in the process.



Spear Point is a spear. The point being exactly in the center of the blade, both edges sharpened. However, when knives are described as "spear point," this describes a special case of a drop point. In a drop point, the point drops slightly from the spine of the blade. In a spear point, the point drops all the way to the center of the blade. Point controllability is excellent and the point is strong (but only if double-edged). With the point so low, the belly is small.



Dagger is the format that provides the ultimate in piercing soft targets. The format tapers to a very thin, sharp point that pierces easily and deeply into soft targets, but can be weak and break on hard targets. The dagger usually has two sharp edges to reduce the profile and let the knife cut in on both sides. It sometimes has little or no belly, instead it can taper into a relatively straight line towards the point, though there will be great variations in the degree to which it curves toward the point. In addition, both edges are ground from the exact center of the blade. The geometry between the lack of belly and the quick-thickening edges are not good for slicing or slashing.



Tanto is usually dual-ground for point strength and sharpness along the straight edge. The point is directly along the spine; the front edge meets the long straight edge at a sharp angle forming the "secondary point." The blade is often dual-ground, a hollow grind along the straight edge and a flat grind up front. The point on this format is incredibly strong due to the spine keeping its full width until it nears the tip. The tip then tapers to create the point. This format is exceptional for hard use where a very

strong point is needed. The sharp, hollow-ground, straight edge performs very well for any job that doesn't require a belly. For slashing, the promoters of this format claim the secondary point positively reinforces the slash. So, even though the design is belly-less, it still slashes well.

Edge Type



Straight Edge blades are generally better for push-cut applications (such as shaving) as well as slicing applications where extreme control, accuracy, and clean cuts are required. Straight edge blades are recommended for hunting purposes and are much easier to sharpen.



Fully Serrated blades could be considered a "semi-saw," providing a more aggressive cutting surface and the cuts produced are more "unrefined." For quick and efficient cuts, serrations are preferred. Serrated blades retain their ability to cut long after straight blades have lost their edge but sharpening requires a sharpening rig with the special serrated blade sharpener. Fully serrated blades are recommended for general sawing or quick slicing applications, such as cutting rope.

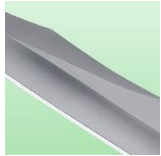


Partially Serrated blades offer the perks and pitfalls of both straight and serrated edges in one knife blade. A partially serrated edge is a good compromise when the blade will be used for highly controlled cutting applications like wood carving, but also offer sawing use for applications such as cutting rope.

Blade Finish/Coatings



TiNi stands for Titanium Nitride and is a typically black finish applied to a knife blade for added strength and durability. This finish is known as one of the toughest finishes available and is both extremely scratch and peel resistant. TiNi is applied to steel through a unique process of plasma deposition performed in a complete air-sealed vacuum.



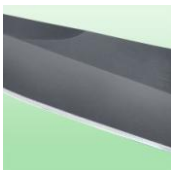
Satin Polish is a shiny finish with a luster falling between bead blasted (matte) and mirror polish (high gloss). Satin finish is the most popular finish, as it appears on most production knife blades.



Mirror Polish is a highly reflective finish typically seen only on high-end, custom, and handmade knives. Besides being incredibly striking visually, mirror polished finishes also aid in corrosion resistance due to their smooth surface.



Bead Blasted is a non-reflective finish created by blasting the surface of the blade with various media, usually beads or sand. This produces a rough surface that has extremely low reflectivity. However, due to the rough surface texture, this finish is more prone to surface corrosion.



Black Oxide, or blackening, is a conversion coating for ferrous materials. It is used to add mild corrosion resistance and for an appealing appearance.

Black Paint is the lowest quality blade coating. The paint gives the blade low reflectivity but has a high probability of chipping and scratching.

Blade Size

Though usually a matter of personal preference blade size should be determined by the job for which it is intended: larger blades for skinning and other heavy-duty applications; smaller blades for everyday tasks such as opening mail. Note: before purchasing a knife it is a good practice to check the laws in your state or country regarding legal blade sizes or lengths.

Folding Blade Opening Mechanisms

Folding knives have a variety of opening mechanisms including spring-assisted, fully automatic and gravity (butterfly). Note that not all opening mechanisms are legal. Consult your local knife laws for more details.

Folding Knife Locking Mechanisms



Liner lock is built into the liner, and when the liner is pressed to the side of the knife, the lock disengages. The advantage to this style of lock is one-blade lock release. However, liner locks have a higher probability of weakening over time, resulting in failure of the mechanism.



Piston lock uses a coiled spring and a piston secured against the tang of the blade. When the piston is pulled back against the spring tension, the tang is released.



Cam lock is designed so the heel of the knife is pivotally carried between opposite sides at one end of a handle. The handle includes an elongated slot between opposing surfaces of the handle for receiving the blade in its folded or storage position.



Lockback gets its name from a rocking lock plate visible on the back of the handle. Opening the blade causes this plate to lock the blade open. Pushing down on the rocking plate at the back of the handle releases the locking mechanism, enabling closure of the blade. Lockbacks can be opened using one hand, but always require both hands to close.

Folding Knife Blade Features



Thumbstud is used by many folding knives, which include them for ease in opening the blade with the thumb single-handedly.



Thumbhole can be used in place of the thumbstud to allow for easy one-handed opening.

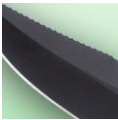


Nail Nick is a notch carved out of the blade used to open the knife. Not as popular or easy to use as a thumbstud.



Kick is an extended tang which passes through the handle of the knife when closed. When pressed, this feature “kicks” the blade open without using a thumbstud or button release.

Fixed Blade Features



Rasp is a series of small teeth sometimes found on the spine of a fixed blade. These teeth aid in thumb grip and hand dexterity, but make some applications difficult.



Double Tooth Saw is included on the spine of the Team Leader Survivor. This saw aids in situations where sawing is required.

Heat Treatment

There is more to knife performance than the steel or blade profile. Perhaps the most important component is the heat treatment of the steel. A good solid heat treatment on a lesser steel will often result in a blade that outperforms a higher grade steel with inferior heat treatment. SOG has spent years perfecting our process and has even gone so far as to develop our Cryogenic Heat Treatment to provide superior edges.

SOG's unique Cryogenic Heat Treatment process increases the toughness and wear resistance of our blades. The process involves taking the knife slowly down in temperature to less than -300°F and then back to room temperature. This stress relieves the material on an atomic level and increases overall strength as well as edge retention. Knife edges stay sharper longer with significantly less micro-fracturing and edge-chipping. It's this dedication to making your knife “SOG sharp” that sets us apart from the rest.



Sheath Information



Kydex sheaths offer a rigid structure and superb protection for fixed blade knives. These sheaths are excellent for diving applications and tactical use. Certain models offer a grooved exposure point for cutting cord or belt without exposing the entire knife blade.



Nylon, like Kydex, is an excellent choice for tactical applications as most offer the versatility of MOLLE compatibility. Nylon offers protection without a rigid structure and excellent permeability for underwater applications.



Leather sheaths are a classic choice in fixed blade carrying options. Very versatile and sturdy, leather will not break like Kydex or fray like nylon. For long-term storage, leather is not recommended as the tanning oils will accelerate the rusting process. It should also be noted that leather takes a brief period of break-in before the sheath is properly fitted to the knife's

shape.

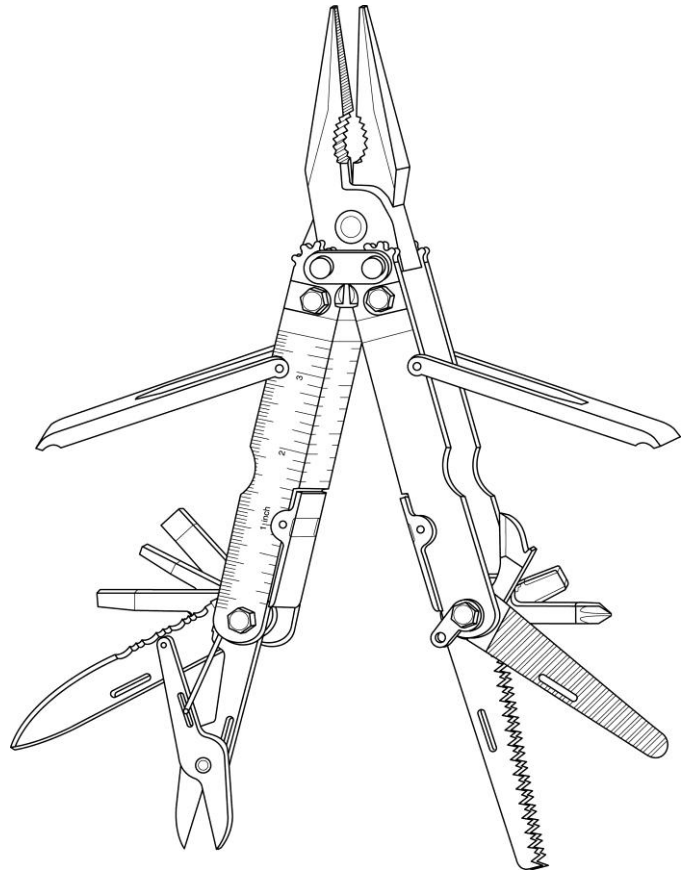
Multipurpose Tools

A multi-tool is a compact, portable hand tool that combines several individual tool functions in a single item. Because of their compact size they can be carried in a pocket or a belt pouch.

Among the earliest examples is the famous Swiss army knife. Other versions may include items like a nail file, tweezers, folding scissors, toothpick, magnifying glass, screwdriver bits, and others. There are also versions that have special tools for specific sports or outdoor activities such as golf, horseback riding, hunting, or fishing.

Replaceable Components

Some multi-tools allow users to replace broken components themselves. However, many of the more popular brands require the tool be returned to the manufacturer to have any broken components replaced. Having the ability to replace worn out or broken components is an advantage.



Compound Leverage



Compound leverage is a patented feature of SOG multi-tools. It provides twice the cutting and gripping force of conventional designs.

Blades

Almost all multi-tools will have some sort of a blade included in them. This makes them very practical for everyday uses such as opening boxes and camping trips.

Components

The components included in multi-tools can vary by manufacturer but often will include multiple screwdriver types, bottle openers, and can openers. There are also specialty components available depending on the intended use of the tool, such as screwdrivers, knife blades and openers.

Carry Pouch



Typically the larger multi-tools will include a pouch that can be mounted on a belt. A majority of the pouches are made from leather or nylon.

Finish

Higher quality multi-tools have a polished finish. This helps to prevent corrosion as compared to some of the other finishes available, like bead blasted.

Opening Type

There are a few ways that multi-tools can be opened. Some components will flick out the front; some will fold open, while others will be flicked open single-handedly.

Weight

The weight of a multi-tool is something else to consider. A lighter tool will be easier to carry but will not be as durable as a heavier tool. Keep in mind that if you go for a lighter-weight multi-tool, you typically have to give certain heavier components up.