

## Buyers' Learning Tools



### Unit Four:

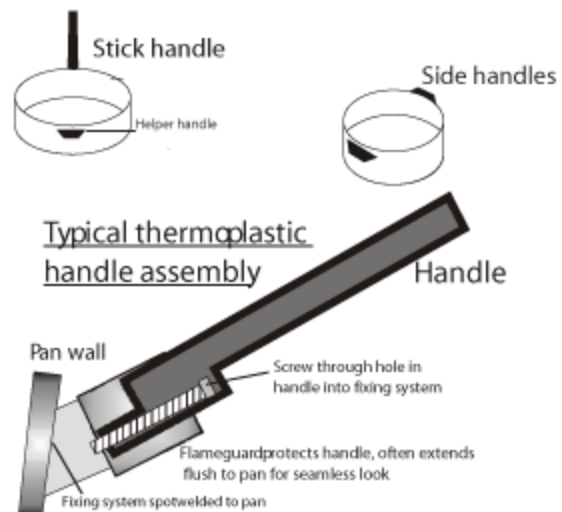
### CMA's Buyers Guide to Handles

Handles are an integral part of almost any type of top-of-stove cookware. They allow for the safe and convenient transfer of a pan and for stabilizing the pan during the cooking process. Handles are an important safety component of any pan used on top of the stove.

**Materials:** Handles can be made of formed metal, solid cast metal, various types of thermoplastics or blends of metal and thermoplastics. Handles can be polished, colored, painted, intentionally roughened to provide a nonslip grip. Some have silicone inserts to aid in reducing heat and increasing the comfort of the handle. Handles can also be cast as part of the pan as is the case of cast iron or cast aluminum. Metal handles can go into the oven, but some plastic handles are rated up to 400 degrees and can be used in the oven as well for many recipes. Thermal cycling of plastic handles used inside the oven does have the potential to cause deterioration of plastic handles over time however.

**Design aspects:** Handles absorb heat. Heat transfer can be reduced by insulating the handle from the wall of the pan, making the handle of nonconductive plastic, or producing a handle long enough and/or shaped in such a way to dissipate the absorbed heat. Some producers of cookware use the term "cool" or some variation of that terminology, since they have designed the handle to dissipate the heat absorbed during use of the cookware. However, no handle can be totally cool to the touch and still remain connected to the pan. It's difficult to know how hot the pan may be under intentional use, so the CMA recommends consumers should always use a mitt, pad or other protective device when handling a hot pan.

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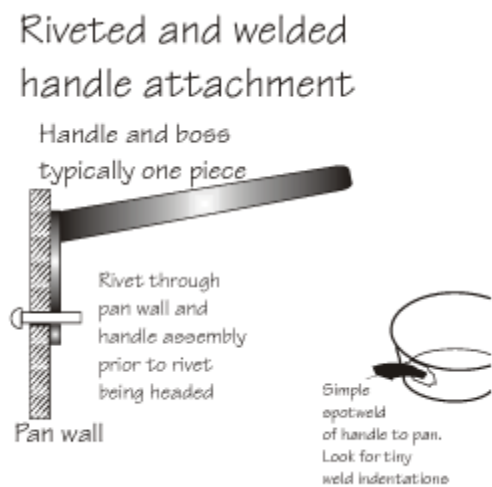
A too-long handle also can make a pan "handle heavy" and therefore unstable with a tendency to tip. This problem is most often seen in small, 1- 1/2 quart saucepan where the maker has used a universal handle more properly sized for a larger pan.

CMA Engineering Standards also call for the handle to have clearance on its underside of 1-3/16 inches at a point half way along the length of the handle. This is to give room for the user's hand to clear any hot surfaces below the handle the pan is being used.

**Shapes and definitions:** A long single handle is usually known as a stick handle. A short handle, such as that on a Dutch oven is usually called a side handle. Most skillets and fry pans have a stick handle, but for those that weigh more than 11 pounds when filled with water, the CMA recommends a second side handle, sometimes known as a helper handle.

**Attachment of handles and testing:** Handles can be riveted through the wall of the pan, attached with a screw to a handle fixing device (often integrated with a flame guard for plastic handles, to shield the plastic from direct heat from gas burners), or in some cases be designed to grip the wall of the pan but release for storage or for use of the pan inside an oven. A handle fixing device that mates with a plastic handle is usually secured to the wall of the pan using high current spot welding. Simple one-piece handles are sometimes spot welded directly to the pan wall. See the illustrations above and below.

The CMA recommends a number of tests in its Engineering Standards to insure that the handle and its fixing method or attachment meets stringent design criteria. There are tests performed on both hot and room temperature handles and pans that help the designer determine the optimum handle for a pan. The CMA believes that good design should allow 15,000 cycles of raising and lowering pan to a level surface without loosening of the handle or its fixing system when tested with a weight 1.5 times the pan's water capacity. Additionally for stick handles, the association recommends a torque test of 40 inch pounds be applied to the handle to check for undesirable deflection by twisting.



**Costs of Manufacturing:** The manufacturing cost of a handle includes the cost of the handle, its fixturing system and the labor and time necessary to attach the handle. Through riveting requires several operations: A punch operation to place holes in the wall of the pan, then a riveting operation that places and then heads the rivets to secure the handle to the pan. With plastic handles, the fixturing system is usually welded to the sidewall of the pan and then the handle is secured with a screw that passes through the handle and into the fixture. Some form metal stick handles can be simply spot welded to the body of the pan, depending on the pan's material and gauge.

