

A double hung was originally designed as a job site built product where the carpenter built the window main frame on the job site and purchased 2 sash that he set inside the frame. It was a very simple design where the sash operated between the exterior and interior trim stops. A manufactured window was not available at the time. Air conditioning was not available and fireplaces were used to heat the building. The ability to lower the top sash on a double hung window, combined with very high ceilings of 12' or more, allowed hot air to escape out the top of the window in the summer and smoke from a fireplace to exit in the winter.

In the early part of the 20th century, manufactured windows that were a complete unit, were available. They were built similar to a site built product, but had better design and workmanship. The carpenter only had to fasten the complete window between the framing studs in a building. Manufactured windows continued to improve in design. Many manufacturers continued to build double hung windows. The air leakage was great, but security was not a problem until the advent of the tilt sash.

Double hung windows had massive air leakage, but before central heat and air conditioning, it was not a major concern. However, once buildings began to have air conditioning installed, the cost of heating and cooling a building became a concern. Many window manufacturers began building single hung windows since the design of the single hung window eliminated many of the problems inherent with the double hung window. The problems with double hung, tilt sash windows included massive air leakage, poor sash operation, poor resistant to breaking and entering, and long term maintenance issues. The single hung window eliminated most of these problems. Also, the benefit of lowering the top sash disappeared with the advent of central heat and air conditioning.

With the advent of the tilt sash, security of the building was adversely affected.

The double hung window has a tremendous amount of air leakage when the window is installed perfectly and the top sash is pocketed properly. However, this is often not the case. In fact, if the top sash is not properly pocketed into the frame head, the sash lock will not engage. This is often the case and is unknown to the homeowner. In this case, an intruder can enter the home by simply opening the sash with no resistance. Even if the top sash is properly pocketed into the frame head and the operating sash lock is properly engaged; it is generally very easy to pry the two sash apart at the center of the window from outside the home. Since the sash of a double hung tilt sash window is not captured in the main frame, the sash will simply pop out toward the inside of the room.

A single hung window with a tilt sash improves on some of these problems. A single hung window with a take-out sash improves on all of these concerns.

DESCRIPTION

	SINGLE HUNG w/take out sash	DOUBLE HUNG w/ tilt sash
Air leakage	Excellent	Poor
Security	Excellent	Poor
Ease of Operation	Excellent	Poor
Long Term Reliability	Excellent	Poor
Cleaning the Glass by hand	Average	Very good
Cleaning the Glass with spray wand or squeegee outside, by hand inside	Very good	Very good, but possible water leak problems

SINGLE HUNG w/take out sash

DOUBLE HUNG w/ tilt sash

Ventilation

Very good

Very good, Excellent, in some instances