

Developments in Equipment

How many measurements does it take to make a custom frame?

by Robert Jolkovski

Glazing, matting, backing, fillet, moulding, and, of course, a piece of artwork are among the items that comprise a custom frame. All of these have to be carefully and correctly measured and cut. One mistake and the frame job is quite possibly ruined, or at least delayed, with both material and time wasted. Whether you operate a one-person shop, or a multi-location operation, the principle is the same: efficient framing requires efficient and correct measurement.

A similar situation exists in many manufacturing plants where the final product consists of numerous parts. Of course, unlike custom framing, many manufacturing operations are usually using many identical parts at a time. Therefore, the manufacturing engineer has the luxury of creating a "set up" for making parts identical. In the old days, this meant creating jigs and fixtures to position the cutting tool to operate repetitively with little or no variation.

Nowadays, material is measured and cut by machines equipped with electronic measurement devices. The simplest of these is the Digital Readout (DRO). The DRO is a measuring tool attached to a metal-cutting machine. It provides an accurate location, in one or more dimensions, and displays that location as a number (inches or metric).

The next step in the evolution of manufacturing tools was the Computer Numerical Controlled (CNC) machine tool. This type of tool uses a computer program to move the cutting tool in a precise path. An example of this adapted for the framing industry is the computerized mat cutter.

How do we in the framing industry find new ways to get things done? Product developers in our industry often see the opportunity in other industries for a crossover product useful to framing. What's coming to our industry is a small part of the digital revolution. We are seeing the

beginning of digital measurement in many of the miter saws available from suppliers in our industry.

My company recently introduced the Producer digital miter saw table. This item is designed to locate the inside corner of frame moulding with a pointer attached to the digital readout. Instead of lining up the inside moulding edge with a mark on the measuring table, the user moves the slider along the saw fence until the required measurement appears on the display (in fractions, decimals, or metric units). When the moulding touches the pointer, the saw is set to cut correctly.

For framers who do not operate on a large production level, investing in this type of equipment may seem unnecessary. Framers who regularly use chop moulding services enjoy the convenience. However, this convenience

brings a price, which can cut into profits. Chop service is not going away. And it shouldn't as it serves a real need in the industry. But if a framer wants to stock a small selection of his or her most popular mouldings, then a tool for accurate cutting in the shop is important. A digital miter saw can be of use in this type of situation.

What's the downside? You will make more money and have more time. Only kidding. That's not a

downside, but you will have to pay for the new equipment. But with increased efficiency, the equipment will pay for itself. For instance, if you save \$25 to \$30 in labor and materials per frame job, it might take 50 or so jobs to pay for it (assuming the equipment is under \$1500).

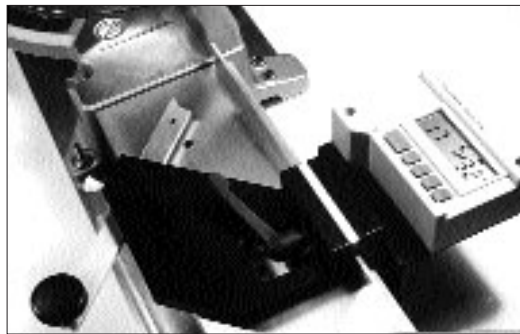
Quicker, more accurate measurement makes framing operations of all sizes more profitable. How you use this extra return is up to you.

Shopping for a compressor?

by Stuart M. Altschuler, CPF, GCF

If you have just purchased a new underpinner or computerized mat cutter (CMC), your next purchase may be the compressor. What should you get?

There are two types of air compressors: *stationary and portable*. The focus of this article is portable units, as these units are smaller, yet more than sufficient for even a mid-size frame shop. Unless you are running a large shop with



Using the technology of a digital miter saw can help increase efficiency in framing.

constant demand for large volumes of compressed air, you are unlikely to need a stationary compressor.

Portable compressors of many different shapes and sizes are available at various price points. A motor, either electric (most common) or gas-powered, generates compressed air by driving a piston. This air is pumped into the metal storage tank. Using a pressure-sensitive switch, the tank is filled to a preset pressure. As air is consumed from the tank, pressure drops. Upon reaching another preset point the motor restarts and the process begins again. All operate in a similar way though they fall into four groups. Let's look at the differences between them.

A primary benefit of *the two-wheeled variety* is the ability to easily move it around without needing long air hoses. *The pancake type* has a small profile that will fit under a low height table. *The hot dog variety* and its big brother, *the double stacked tank*, are taller and slimmer variations of the same type of compressor. The double stack has a larger air storage capacity, which means the motor won't turn on as often.

The choice here is based more on these ancillary factors than performance. Is the compressor going to be in an area where the noise may be bothersome to customers? Do you have particular space requirements? The next question to be answered is whether the motor should be *lubricated with oil* or *oilless*. Here the opinions are split. The oil-lubricated motor is more dependable and quieter, yet requires more maintenance than the oilless variety. While the oilless motor requires less maintenance, it is slightly noisier. Regarding noise, there are some compressors, all oil-lubricated and more costly (usually

about \$1000 as opposed to about \$350), which are relatively silent. The noise they make is more like the hum of a refrigerator than a car engine.

With some models the motor can be either *belt-driven* or *direct-drive*. If a belt-driven motor were to fail, it can be replaced, while a direct-drive unit can not. That said, the smaller units that you will find on the market are direct-drive. Belt-driven is usually available in the two-wheeled style compressors and larger stationary models.

In order to size the compressor properly look at two factors: *air pressure* and *air delivery*. All of the compressors described here are capable of putting out between 90 to 130 psi (pounds per square inch). To regulate that pressure, you set a dial knob. Most of the machines you might buy for your shop have an additional air regulator, ensuring not too much air is sent. Set the compressor's output pressure knob above what is required by the tools.

In my shop, the pressure output knob is set at 100 psi which works fine on all our tools. Air delivery rate is measured by cubic feet per minute (CFM). The more tools used, the greater CFM needed. Spray guns use the most air (seven to 12 CFM), while tools like underpinners use short bursts of air, consuming about one to two CFM. A CMC generally consumes less than two CFM. CFM rates vary widely at different pressures, so a comparison of compressor sizes needs to be made by comparing flow rate at a specific pressure.

What types of tools in the frame shop can be driven by air? In addition to your underpinner and CMC, there are two major ones used by framers. Many manufacturers have air-powered tab

drivers. These tools are the equivalent of point guns, using many types of fasteners from bendable tabs (think flex points) to staples. The other tool is a brad nailer.

Accessories. Once you have your compressor you will need to connect your tools. Many types of *couplers* are available. Couplers are male or female and either screw type or quick connect. The quick connect (while a little more expensive) is easier to use because you can easily change from one tool to the next by just slipping back the collar of the quick connect. It's good policy is to attach an individual quick connect to each tool. When attaching couplers, use Teflon tape to ensure an airtight connection.

There are different hose types available as well. Rubber hoses in $\frac{3}{8}$ " diameter are best. They are strong and flexible. Look for a hose that has what appears to be a shield at each end. This device is a strain relief that prevents the hose from cracking prematurely. Vinyl is a less expensive, lighter alternative. If you need to run a line from the compressor to a tool, use a rubber hose. If you are just attaching your tool to the nearby compressor, vinyl is probably sufficient.

Finally, a word about air tools (blow guns). While these tools will often make clean-up easier, they should *never* be used to eliminate debris from artwork.

Maintenance. Proper maintenance is imperative. Failing to check or change the oil will result in the motor seizing, requiring complete replacement. If you don't drain the air tank periodically, it will rust from the inside out since the compressed air is loaded with moisture. In an extreme situation, when air is forced into the tank under heavy pressure, the tank will let go and the result is a missile-like

event. Very dangerous! Check and replace the oil according to the manufacturer's directions and drain the tank daily.

Buying and using an air compressor in your shop is easy, if you just know a little bit about them. Buy with the confidence instilled from knowledge. ■



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