

## ***Choosing Spray Equipment and an Air Compressor for the Clay Studio***

### ***Spray Equipment***

I'll keep this brief, because the choice is so simple. I've run three different academic clay studios over the past thirty years, and we had spraybooths and spray equipment at all three, so I've tried just about everything available.

For the past twenty years at the Appalachian Center for Craft until my retirement in 2018, we used gravity-feed HVLP (high-volume-low-pressure) spray guns designed for spraying automotive primers. They are readily available inexpensively at Harbor Freight or on Amazon or eBay, but be sure to get ones intended for spraying primers. They have a spray nozzle and needle between 1.8 and 2.2mm in diameter, which is appropriate for ceramic media. Smaller nozzle/needle sets clog quickly and don't work as well with media containing suspended solids. Glazes and slips are suspensions, meaning that they contain non-dissolved particles in suspension in a liquid, in this case water. The larger orifice/needle sizes are necessary for efficient spraying of the kind of media we use. For information on how to properly use and maintain a gravity-feed HVLP spray gun, see the separate handout on that subject.

For small-area and detail spraying, I recommend the Paasche model HS airbrush set as high-quality starter set. As a full-time studio potter in California in the early 80s I used this set to spray bands of clear glaze over masked areas of trailed or feather-combed slip decoration, and it worked great. There are innumerable other airbrush choices on the market, so do your research to find the one best suited to your needs.

### ***Choosing an Air Compressor***

If you are purchasing a compressor solely for use with an airbrush, then any of the small compressors made by Paasche and other manufacturers will work well and can also be used for inflating tires, sports balls, etc. Such compressors will work without an air storage tank, but bear in mind that you will be listening to the compressor running the whole time you are spraying.

A larger compressor is an expensive piece of equipment, but it's good for many tasks besides running a spray gun. High-quality air tools used to be very expensive, but competition from overseas has brought the prices way down. A good compressor will run a whole range of tools useful around the studio and workshop, including a sandblaster, die-grinder, orbital sander, pneumatic hammer, and abrasive cutoff tool.

### ***Avoid Direct-Drive Maintenance-Free Compressors***

When shopping for compressors, do not go cheap if you want the unit to last. In home improvement centers like Lowe's and Home Depot, you will find an abundance of "direct-drive/maintenance-free" compressors you find in the big-box home-improvement stores like Home Depot and Lowe's. Those features might sound good, but not when you consider longevity and value. I can guarantee that the unit will work fine for the duration of the

warranty, but not much longer than that. Such compressors are direct-drive from motor to compressor, meaning that the compressor is turning the same speed as the motor. A much smaller compressor unit is turning very fast to produce the rated amount of CFM (cubic feet per minute). They are maintenance free because they have Teflon-lined piston and/or cylinder and are not otherwise lubricated. Both of those alternatives make these units far cheaper to produce, but when you buy a compressor, you pay according to horsepower and the air output. The direct-drive units can seem fine if you are only evaluating them in those terms, when in fact they are a complete rip-off in terms of what you really get.

### ***Go for Cast Iron and Belt-Drive***

Always select a belt-driven unit with a cast iron compressor cylinder or a cast iron sleeve in an aluminum cylinder. There are plenty available, but you have to look for those features. The belt-drive means that the compressor is turning at a slower speed, requiring a larger compressor cylinder to produce the rated CFM. Slower speed means much greater longevity. Cast iron cylinder or sleeve means much greater longevity. Such a compressor, properly maintained and not abused, will last indefinitely.

### ***How Much Horsepower Do I Need?***

If you are planning to do serious spraying of ceramic media on a regular basis, make sure to get a compressor with at least a 5 HP motor such as the Ingersoll-Rand SS5 5HP 60 Gallon Single Stage Vertical Air Compressor for \$1000. This unit produces 18.1 CFM at 135 PSI, and that's what you need for really effective continuous operation of a spray gun or air tool. You do get what you pay for in a situation like this.

On the other hand, if you are doing occasional spraying of some forms as you prepare to fire a kiln-load of wares and would like to be able to run other air tools for limited periods of time, then a 2 HP unit like the Campbell Hausfeld VX4002 for around \$500 will work fine. It produces 5.5 CFM at 90 PSI, so you can see the difference in output you get for twice the price with the Ingersoll Rand mentioned above. I purchased a Campbell Hausfeld 2 HP compressor from the Montgomery-Wards store in Eureka, California in 1978. I have routinely drained condensation from the tank, and changed the oil in the compressor every few years, but otherwise it has needed nothing. It still has the original V-belt. If I have to do a lot of spraying or am running an air tool continuously, I might occasionally have to stop for a few minutes and let the compressor catch up with me, pumping the tank back up to pressure. Otherwise it meets all my needs and has worked perfectly for over forty years.

### ***Compressor Noise***

One final consideration is compressor noise. Noise pollution is a serious consideration in any work situation, especially if you are trying to be creative. The length of pipe or hose between compressor and air tool or spray gun is a consideration, because longer runs require a more powerful compressor. That might be a good reason to invest in a larger unit, so that it can be located outside or in an insulated space. If you do the latter, do not restrict the air movement required to cool the motor and the compressor cylinder.