



TECH TIPS

a technical bulletin by the experts at Gaco Western

DYNAMIC Temperature vs. STATIC Temperature

Many contractors are confused about the important difference between dynamic and static temperatures.

Static Temperature is the target temperature of your proportioner pre-heaters while it is sitting idle without any fluid flowing through the system. For example 130 degrees.

Dynamic Temperature is the temperature that your proportioner pre-heaters are able to maintain while fluid is steadily flowing thru the system. In our example of 130 degrees target setting, a properly operating machine will momentarily dip below 130 degrees as fluid starts to flow. This dip will trigger the heaters to activate and raise the temperature back up to the target of 130 degrees and steadily maintain that temperature as long as fluid continues to flow.

As long as your static temperature and your dynamic temperature remain the same all is well. The problem occurs when the dynamic falls below the static and remains there. This means that the target temperature setting has outstripped the proportioner pre-heaters ability to keep up. This will be different for every machine, from day to day, for different tip sizes, and even from sprayer to sprayer depending upon technique.

Once the target temperature has exceeded the proportioner pre-heater's ability to keep up, additional increases in the target temperature will be ineffective since the dynamic will always be the same regardless of the target temperature. Applying foam that is too cold will cause poor yields, shrinking material, drips, and pull backs from the studs. Poor yield alone can easily be costing you \$150 to \$300 dollars for every set sprayed.

The solutions:

- Raise barrel temperatures to compensate for the difference between dynamic and static. For example if static is set at 130 degrees and dynamic falls to 120 degrees raise barrel temperatures 10 degrees.
- Use a smaller tip size to constrict fluid flow to a level that allows the heaters to maintain dynamic temperature.
- Contact your equipment manufacturer about the possibility of upgrading your proportioner pre-heaters. (\$5,000-\$7,500 depending upon brand and model)
- *The easiest and least expensive option that I have found is to install a polar pack.* This is a simple to add and inexpensive alternative at around \$2500. The upgrade will pay for itself within 10-20 sets. Installation takes about an hour.
 1. Locate a suitable empty space above or beside your proportioner to mount the control box on the wall.
 2. Simply install the booster heaters anywhere in the hose lines from the barrel transfer pump to the proportioner. The most common location is to disconnect the hose from the y-filter and insert the heater between the y-filter and the hose. But any joint can be interrupted and the polar pack inserted in a convenient spot.
 3. Connect the control box to your power circuit panel. The device requires 220 volts and 4000 watts.



A QUICK POLAR PACK SOURCE:

Spray Polyurethane Parts
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www.spraypolyurethaneparts.com

Have an idea, suggestion or questions?

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