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High Temperature Fan – RFQ Worksheet

The following is meant to be an aid in determining your fan requirements. This is not meant to be a substitute to having an experienced engineer evaluate your requirements.

1. What is the **desired fan performance**? Do you wish the fan to develop . . .
 - A. Very high volumes of flow (up to 258,000 CFM) against very low pressures (up to 4" WC).
 - B. High volumes (up to 200,000 CFM) against low to medium pressures (up to 16" WC).
 - C. Medium volumes (850 to 45,280 CFM) against low to medium pressures (up to 8" WC).
 - D. Medium to high volumes (1500 to 20,000 CFM) against very high pressures (up to 62" WC).
 - E. Low to medium volumes (100 to 45,000 CFM) against high pressures (up to 20" WC on standard units, up to 34" WC on specially designed units).

- 1A. What is the **cubic volume (CFM)** that the fan is expected to circulate? Some factors which determine this are:
 - a. The size (cubic volume) of the heat treat chamber?
 - b. How frequently must the gas be changed or circulated?
 - c. How quickly and/ or uniformly do you wish to heat or cool the load?

- 1B. What is the **static pressure (SP)** drop of the system at standard conditions (70°F @ 29.92" HG). The best approach is to keep the pressure drop as small as possible. Some factors which determine pressure drop are:
 - a. Free area for gas flow through the chamber after load is in place.
 - b. Length and size of ductwork
 - c. Restriction on inlet and outlet of fan.
 - d. The number of elbows or air direction changes.

2. Will the internal operating pressure of the chamber be **positive or negative pressure**?
 - 2A. Will the internal operating atmosphere need to be sealed from the outside air?
 - 2B. If a seal is required, how good must the seal be?

3. What is the **gas composition** that the fan will be handling? Will it be corrosive, explosive, toxic, combustible, or a special atmosphere e.g. nitrogen, argon, etc.?
 - 3A. Must the fan be sealed to protect this atmosphere?
 - 3B. If a sealed fan is required, how good must the seal be?

4. What is the **maximum temperature** the fan will be exposed to?
 - 4A. What is the maximum temperature the fan will be rotating?

5. Where is the fan to be **mounted**? (in the roof, side wall, floor, other?)
 - 5A. What are the desired **rotation and discharge** position? (See Fig 33)

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