



BASIC METHODS OF SELECTION

1. **INLET PIPE SIZE** - commonly used by purchasers who do not have detail specifications. The units will work in a very high percentage of applications.
2. **AIR FLOW** - sometimes specified, check pressure drop (P). If curves indicate a P higher than allowable, use the next larger unit size.
3. **ENGINEERED EQUIPMENT SELECTION** - should be used when reviewing entire plant system (see detailed procedures following).

ENGINEERED EQUIPMENT SELECTION PROCEDURE

1. Determine compressor size -

HP
CFM (free air = SCFM)
Pressure

NOTE: Most compressors produce 4 SCFM (or CFM free air) per HP @ 115 PSIG.

2. Sketch air line flow to all use points grouping into major pipelines feeding multiple use points. Locate unit within ten feet of points of use if possible. Where multiple units (ie spray nozzles) are used, install unit prior to tees and size for total flow as below.

3. For all use points determine:
 - a. CFM per unit (be sure to confirm whether CFM is free air (SCFM) or CFM at required pressure. Convert to SCFM for equipment selection if necessary.
 - b. Required pressure for operation.

4. Determine required SCFM by adding the SCFM per unit and using factor for intermittent use, ie 4 spray nozzles require 15 SCFM each. Estimate that each operates for a maximum of 60% of the time. Design SCFM for the dryer would be $4 \times 15 \times 0.6$ or 36 SCFM.
5. Determine maximum allowable pressure drop (P) PSI by subtracting the required pressure (3b) from the line pressure (compressor output pressure minus estimated line losses).
6. Select a dryer and, using line pressure and SCFM (4), determine actual P for the dryer from the appropriate curve (see page 2). Be sure to adjust for desiccant type. Molecular sieve (MS) is approximately 10% less in P than clay desiccant (CD).

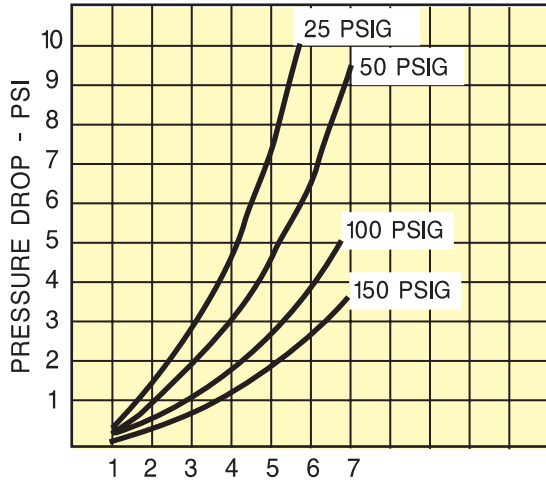
- a. If the P is greater than allowable P (5), go to the chart for the next larger unit and determine the P for that unit.
- b. If the P is less than allowable P, go to the chart for the next smaller unit and determine the P for that unit. If it is acceptable, use it.

It is virtually impossible to match each system requirement exactly. If the P of the dryer is lower than but close to (ie at 80%) the P allowable, air flow will be higher (ie 110%) than required SCFM (4). If the P of the dryer is higher than but close to the P allowable, (i.e. 120%), air flow will be lower than (ie. 90%) the required SCFM (4). Judgment must be used based on the individual system, but normally such small variations will not dramatically affect equipment performance.

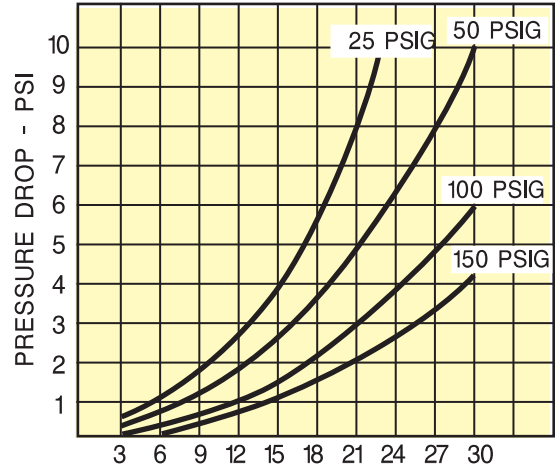
7. Check SCFM against maximum rated SCFM for drying on the unit (ie. CD or MS). Model C418-1 has a maximum rating of 70 CFM of free air at 100 PSIG for drying using clay desiccant. If SCFM is determined to be less than 70, a Model C418-1 will dry successfully. This will be the case in almost all selections.



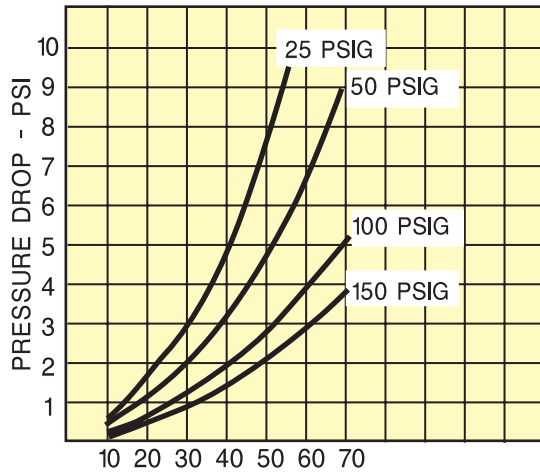
FLOW CURVES SCFM



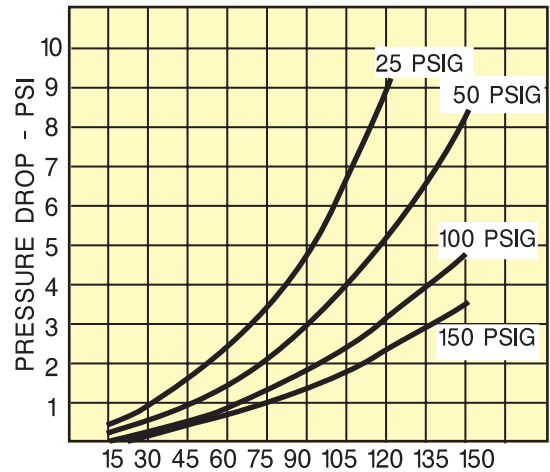
Model B25-1/4



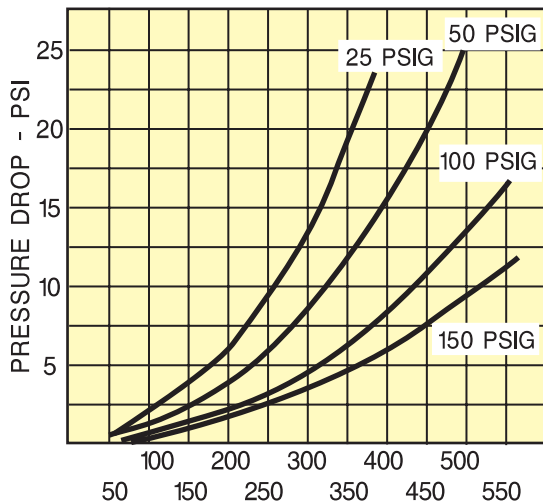
Model A38-1/2



Model C418-1



Model E625-1-1/2



Model D832-2

NOTE:
Molecular sieve (MS) is approximately 10% less in P than clay desiccant (CD).