

Helpful Hints/Rules of Thumb

1. The typical body shop/garage uses 2.5 Horsepower per man
2. 4 CFM per Horsepower on a 100 psi air compressor
3. Each psi pressure drop equals 0.5% in Horsepower
4. 7.48 gallons per cubic foot
5. The heat load on an air cooled compressor is $HP \times 2545$ BTU/HR
6. 60% of condensate is removed after the aftercooler
7. 96% is removed after the refrigerated air dryer
8. Pressure and flow are inversely proportionate
9. Every 20 degree increase in discharge temperature increases moisture content by 50%

How to Size Air Treatment

There are different classes of air quality that are dependent upon the particle size, moisture, and oil content in the air. A chart of the different classes of air and an example on how to determine the ISO class can be seen below. When sizing air treatment equipment, consider the quality of air the customer desires.

Air Quality Class	Particle Size (Micron)	Pressure Dew Point (°F)	Oil Content (PPM)
1	0.1	-94°F	0.01
2	1	-40°F	0.1
3	5	-4°F	1
4	15	-38°F	5
5	40	-45°F	25
6	60	-50°F	40

Example:

- 1 Micron Particulate
- 38° F Pressure Dew Point (moisture Content)
- 0.1 PPM Oil Concentration

The ISO Class for this air quality is "2-4-2"

When selecting a dryer, size for the worst case to insure proper equipment performance under all conditions. The critical variables to consider when sizing air treatment equipment are:

- Flow Rate (Max)
- Inlet Air Pressure (Min)
- Inlet Air Temperature (Max)
- Ambient Air Temperature (Min and Max)
- Process Water Temperature (Min and Max)
- Elevation (Max)
- Location (Indoors vs. Outdoors)