

# Maintaining Adequate Air Flow

## Prevent and Eliminate Air Supply Restrictions

### Common Causes of Restriction

- The air supply hose is too long.
- The inside diameter (I.D.) of the hose is too small.
- The air connections or fittings have inside diameters that are too small.
- There are too many air connections or fittings being used.
- If an inline filter is being used, the unit may be too small or the filter element may be plugged.
- If an inline regulator is being used, the unit may be too small, not adjusted properly or defective.
- The air supply hose, air fitting, air tool inlet or air tool exhaust may be plugged.
- If the air tool has a speed regulator, it may be closed.

### Air Hose Supply

- Use the air supply hose with the correct inside diameter as is recommended by the air tool manufacturer.
- Use the shortest air supply hose possible for the task being performed.
- Longer air supply hoses require larger inside diameters.
- Coiled air supply hoses appear much shorter than they actually are. When using a coiled hose, make sure that the inside diameter is large enough to compensate for the length (see chart below).

### Air Supply Hose Recommended Chart

- Choose the correct Inside Diameter (I.D.) and Length of Air Supply Hose.

**NOTE:** To increase the length of air supply hose it will be necessary to increase the inside diameter of the hose.

Air Motor SCFM (Standard Cubic Feet Per Minute)	Hose & Fitting I.D. Required	Recommended Length Air Supply Hose
22 SCFM (623 L/Min)	1/4" (8 mm)	1' - 8' (0.3048 m – 2.44 m)
28 SCFM (793 L/Min)	3/8" (10 mm)	1' - 25' (0.3048 m – 7.6 m)
35 SCFM (991 L/Min)	3/8" (10 mm)	1' - 20' (0.3048 m – 6.10 m)
45 SCFM (1,274 L/Min)	3/8" (10 mm)	1' - 10' (0.3048 m – 3.042 m)
73 SCFM (2,067 L/Min)	1/2" (15 mm)	1' - 20' (0.3048 m – 6.10 m)

### Air Supply Hoses (Available from Dynabrade)

- 3/8" I.D. with two male 1/4" NPT fittings. **Part No. 11292** - 8 feet (2.44 m) long (see page 226)
- 1/2" I.D. with one male and one female 1/2" NPT fitting. **Part No. 95870** - 5 feet (1.53 m) long (see page 226)
- 8 mm I.D. and 10 mm I.D. lightweight hoses (see page 225)

## The Cost Of An Air Hose Leak

### One 1/16" hole in a hose leaks at 100 PSIG:

- 4.25 cubic feet per minute (CFM)
- 255 cubic feet per hour
- 2,040 cubic feet in an 8-hour day
- 6,120 cubic feet per 24 hours

### The cost of one leaking air hose:

$$\begin{array}{rclcl}
 240 & \times & 6,120 & = & 1,468,800 \\
 \text{working days} & & \text{leakage in cf} & & \text{air lost in cf} \\
 \text{per year} & & \text{per 24 hours} & & \text{per year} \\
 \\ 
 1,468,800 & \times & \$0.00041^* & = & \text{US } \$602.21^* \\
 \text{air lost in cf} & & \text{cost per cf based on typical} & & \text{total cost} \\
 \text{per year} & & \text{energy costs per kilowatt-hour} & & \text{per year!}
 \end{array}$$

\*Costs will vary based on local charges per kilowatt-hour.

## Plug Connectors

### Compare Airflow SCFM (L/Min)

- All information based upon size of I.D. at 90 PSIG (6.2 Bar) in conjunction with mating coupler.
- NPT (National Pipe Thread) is the thread size (such as 1/4" NPT).

#### Common Plug Connector 25 SCFM (708 L/Min)



#### Dynabrade Plug Connector 76 SCFM (2,152 L/Min)

