PERMANENT PIPING SYSTEM

For some workshops, it may be more convenient to install permanent piping rather than to move the Dust Collector to various locations throughout the shop.

The optional 4" inlet assembly is the link to a permanent installation. It replaces the 3-way inlet of the Dust Coliector to connect to a permanent piping system along the walls of your workshop. With a permanent setup using PVC (polyvinyl chloride) pipes and 2-1/2" diameter flexible hoses, you can conveniently work with as many as three machines in succession without moving the Dust Collector or changing hose connections.

Inlet Installation

Warning: Turn off and unplug the Dust Collector. Remove the cover plate and 3-way inlet from the Dust Collector. Attach the 4" inlet assembly with the four screws that attach the 3-way inlet.

The elbow of the inlet assembly can be set at four positions 90-degrees apart. If necessary to change the position of the elbow, take out its two attaching screws. Turn the elbow to the desired position, making sure that the mounting holes of the elbow and inlet line up. Reinstall the two screws securely.

System Requirements

In planning a permanent system, keep in mind that long lengths of flexible hose will reduce airflow. Also, smooth piping causes much less resistance to airflow and is strongly recommended for the main collection line of your system. Rigid PVC pipe and various fittings are available at most home centers or plumbing supply distributors, and are best suited for permanent systems.

Figure 25-6 illustrates a **suggested** permanent piping system. The following requirements should be met in building an efficient dust removal system:

• Make your system simple, compact and efficient. Avoid long runs, sharp turns and restrictions.

• The overall length of the PVC piping should not exceed 25 feet. This length permits use of:

-Two 90-degree elbows (including the 4" inlet assembly). Elbows reduce airflow. So, for each additional elbow used, you should reduce the overall length of your system. Refer to the chart in Figure 25-6 to determine the amount of piping reduction recommended for the addition of certain fittings.

-One 4" dia. x 8' long flexible hose from Dust Collector (not available through Shopsmith). This will make it more convenient when changing bags or moving the Dust Coilector. However, it will reduce airflow slightly.

-Three 2-1/2" dia. x 8' long flexible hoses to connect to machinery. If you're planning a system that will connect more than three machines, have provisions for plugging or switching the hoses. Only connect three hoses at a time. Failure to do this would cause the machine at the end of the line to have insufficient airflow, with too little suction to remove sawdust from the machine.

• Use Schedule 10 (thin wall) PVC pipe and fittings. If Schedule 10 plumbing is not available, thicker walled pipe and fittings (higher Schedule number such as 40 or 60) may be used. However, because of the resulting differences in diameters, the flexible hose and piping connections will have to be taped securely with duct tape to prevent reduced airflow due to leakage.

• If multiple-size “Y” fittings are not available, 4" x 4" x 4" “Y”, fittings may be used. Wooden “doughnut” reducers can then be made to adapt the 4" I. D. branch of each “Y” to accept the 2-1/4" (outer diameter) male fitting of the 2-1/2" diameterflexible hoses. (See Figure 25-7.)

• 90-degree elbows should be used only where absolutely necessary. Long sweep elbows are recommended. Do not use 90-degree tees in place of the “Y” fittings.

• Mount the PVC piping on your shop walls **at the same height as the inlet of the Dust Collector**. Use nylon straps and screws, wire and screws, or L-brackets, screws and wire to support the pipe. Place supports at each fitting or every 4 feet, whichever is closer.

• Avoid vertical lines.

• Limit the length of flexible hoses.

• Locate equipment which produces high volumes of chips and sawdust closest to the Dust Collector.

• Plug or cap unused openings, but keep at least two 2-1/2" openings in use at all times to ensure sufficient airflow in 4" pipe sections.

• Use duct tape, PVC cement or silicone around all permanent joints to prevent air leakage.

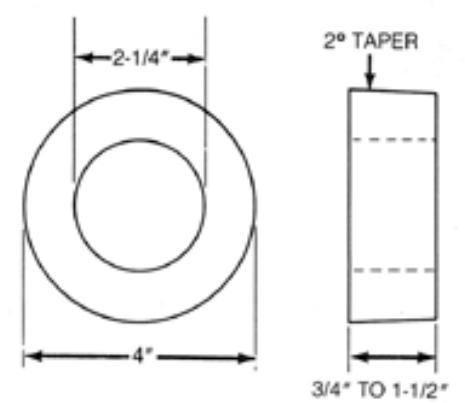

Figure 25-7. How to make a “doughnut” reducer:
1. Make a 4” diameter wooden disc on a bandsaw (see illustration for the range of thicknesses).
2. Drill a hole 2-1/4” through the cneter of the disc.
3. Disc sand the outer circumference of the wooden disc to get a slight taper.

CLEANING THE FILTER HOOD

During operation, dust will build up on the inside surface of the filter hood. After every 8 to 10 hours of Dust Collector operation, vacuum the exterior of the filter hood. Just before you change the collection bag, tap the top and sides of the filter hood to dislodge the dust buildup. If you're generating a lot of fine dust, tap off the dust buildup more often.

After every 15 to 30 hours of operation, wash the filter hood to maintain optimum performance. Before washing, dislodge the dust buildup and remove the retaining strap. Then, hand or machine wash the hood in cold water using a mild detergent. Line dry or tumble dry on no heat. When the hood is dry, reinstall the retaining strap assembly.

CLEARING THE AIR

When cleaning up and before you open the door(s) of your shop to adjacent rooms, use the Dust Collector to remove the remaining airborn sawdust.

If your Dust Collector is portable, use one hose for vacuuming, with the remaining two inlets open to pull in the dusty air. If you have a permanent piping system, disconnect the flexible hoses from the equipment and then turn on the Dust Collector. How long it takes depends on the size of your workshop and the amount of airborne sawdust.