TABLE 76. SIZE OF CONNECTIONS FOR WOOD-WORKING MACHINERY

Type of Machine	Diameter of Connections in Inches
Circular Saws, 12 in. diam.	4
Circular Saws, 12-24 in. diam.	5
Circular Saws, 24-40 in. diam.	6
Band Saws, Blade under 2 in. wide	4
Band Saws, Blade 2-3 in. wide	5
Band Saws, Blade 3-4 in. wide	6
Band Saws, Blade 4-5 in. wide	7
Band Saws, Blade 5-6 in. wide	8
Small Mortisers	6
Single End Tenoners	6
Double End Tenorers	7
Double End, Double Head Tenoners	10
Planers, Matchers, Moulders, Stickers, Jointers, etc.—	
With Knives, 6-10 in.	5–6
With Knives, 10-20 in.	6–8
With Knives, 20-30 in.	6–10
Shapers, Light Work	4–5
Shapers, Heavy Work	8
Belt Sander, Belt less than 6 in. wide	5
Belt Sander, Belt 6-10 in. wide	6
Belt Sander, Belt 10-14 in. wide	7
Drum Sander, 24 in.	5
Drum Sander, 30 in.	6
Drum Sander, 36 in.	7
Drum Sander, 48 in.	8
Drum Sander, over 48 in.	10
Disc Sander, 24 in. diam.	5
Disc Sander, 26-36 in. diam.	6
Disc Sander, 36-48 in. diam.	7
Arm Sander	4

TABLE 77. SIZE OF CONNECTIONS FOR GRINDING AND BUFFING WHEELS

Diameter of Wheels	Max. Grinding Surface Sq. In.	Min. Diam. of Branch Pipes in Inches
Grinding		
6 in. or less, not over 1 in. thick	19	3
7 in. to 9 in., inclusive, not over 1½ in. thick	43	3½
10 in. to 16 in., " " " 2 in. "	101	4
17 in. to 19 in., " " " 3 in. "	180	4½
20 in. to 24 in., " " " 4 in. "	302	5
25 in. to 30 in., " " " 5 in. "	472	6
Buffing		
6 in. or less, not over 1 in. thick	19	3½
7 in. to 12 in., inclusive, not over 1½ in. thick	57	4
13 in. to 16 in., " " " 2 in. "	101	4½
17 in. to 20 in., " " " 3 in. "	189	5
21 in. to 27 in., " " " 4 in. "	338	6
27 in. to 33 in., " " " 5 in. "	518	7

Tumbling barrels have connections ranging from 4 to 8 in., bucket conveyors 6 to 12 in., and screening machines 6 to 10 in.

In general room exhaust large connections should be provided so that the air may be handled at low velocity and with a minimum power consumption.

After having determined on the proportions of the exhaust system as regards hoods and connections it is then necessary to choose the air velocity or suction at the hood connections, suction at the hood connections being a measure of the air velocity at that point.



FIG. 87. EXHAUST AND CONVEYING SYSTEM HANDLES WASTE FROM WOOD WORKING MACHINES

AIR VELOCITY

The air velocity required is dependent upon the specific gravity of the material, the fineness of the particles, and their physical characteristics. Certain materials such as grease wools, silk waste, salt, and other hydroscopic substances are difficult to handle due to the tendency to deposit in the conveyor pipes.

While the velocity in the system should be sufficiently high to insure the removal of the material it should be kept as low as practicable since any higher velocity requires the use of unnecessary power. With a fixed system or orifice the power increases as the cube of the increase in velocity.

Velocities commonly employed are: 2,500 to 3,000 ft. per min. for light dusts, cotton, shavings and sawdust from dry wood, and similar