

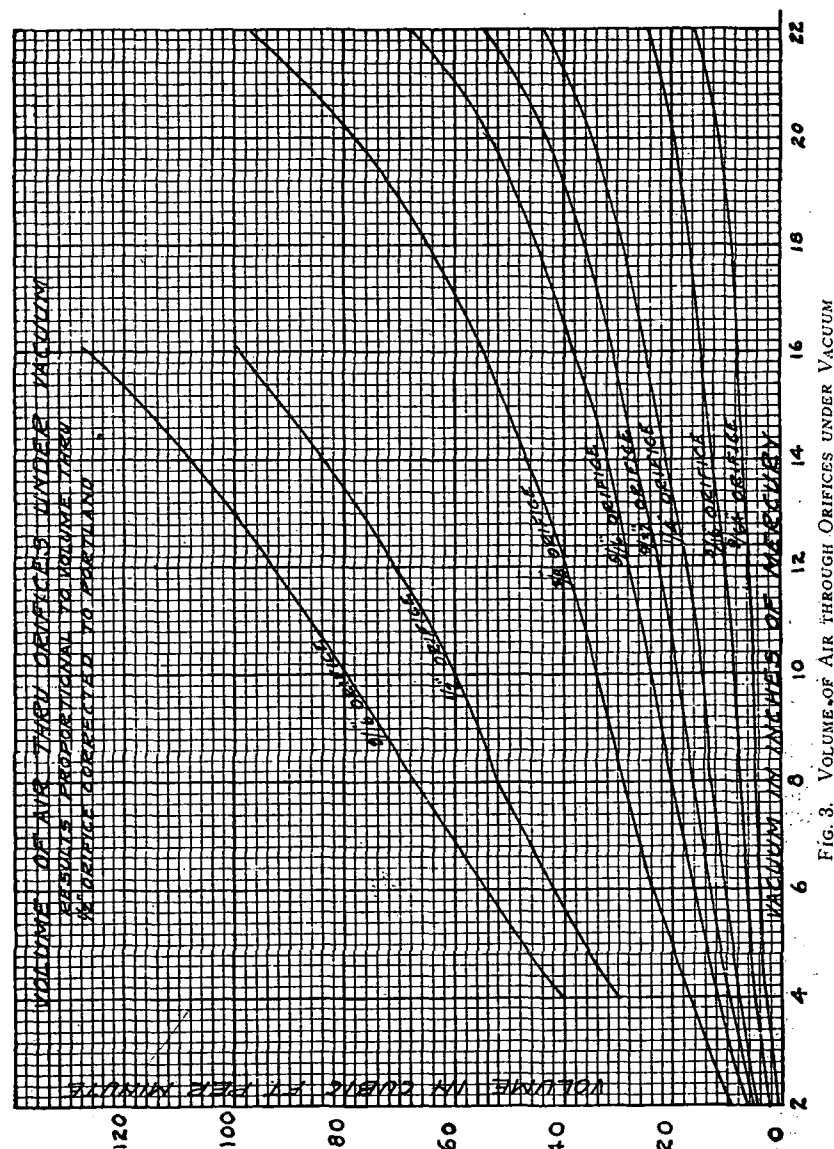


FIG. 3. VOLUME OF AIR THROUGH ORIFICES UNDER VACUUM

CHAPTER XVIII—PUMPS AND TRAPS FOR HEATING AND VENTILATING EQUIPMENT

The increase in pump capacity may be reduced if a static head above the pump suction is provided. When this static head is made equivalent to the absolute boiling pressure of the condensate (measured in feet of water) minus 12 ft., no increase in pump capacity is required. Such static

TABLE 6. CORRECTION FACTORS FOR STANDARD CENTRIFUGAL PUMPS FOR TEMPERATURES OF CONDENSATE ABOVE 180 DEG. FAHR. AT PUMP SUCTION

DEG. FAHR.	FACTOR
190	1.15
200	1.56
204	2.00

Note.—To use Table 6, multiply the quantity of condensate to be handled by the factor corresponding to the temperature of the condensate at the pump suction and select a pump suitable for the quantity thus found.

suction head requirements may also be reduced about 50 per cent when special large suction inlets or special impellers are provided.

Sufficient head in addition to the total head necessary to overcome static head, velocity head, pipe friction and boiler pressure should be provided wherever condensate is to be returned direct to a boiler from the pump.

TABLE 7. DUPLEX PISTON TYPE RETURN PUMPS WITH RECEIVERS

Standard Pressure

SIZE OF PUMP	RECEIVER CAPACITY GALLONS	SQ. FT. DIRECT RADIATION	LB. CONDENSATE PER HOUR	MINIMUM STEAM PRESSURE
3 × 2 × 3½	12	6000	2000	50
4½ × 2½ × 4	20	10,500	3500	40
5½ × 3½ × 5	40	19,500	6500	35
6 × 4 × 6	60	30,000	11,000	35
7½ × 5 × 6	100	45,000	15,000	30

Low Pressure

SIZE OF PUMP	RECEIVER CAPACITY GALLONS	SQ. FT. DIRECT RADIATION	LB. CONDENSATE PER HOUR	MINIMUM STEAM PRESSURE
4½ × 2 × 4	12	6000	2000	25
5½ × 2½ × 5	20	10,000	3500	20
6 × 2½ × 6	40	120,000	4000	15
6 × 3 × 6	40	180,000	6000	20
6 × 3½ × 6	60	290,000	9000	25

TABLE 8. CENTRIFUGAL RETURN PUMPS WITH RECEIVERS

SIZE OF PUMP DISCHARGE INCHES	RECEIVER CAPACITY GALLONS	SQ. FT. DIRECT RADIATION	LB. CONDENSATE PER HOUR	H. P. TO DRIVE	TOTAL HEAD FT.
1	40	12,000	4000	1	25
1½	60	25,500	8500	1½	50
2	100	42,000	14,000	2	50