

Recirculation

Recirculation is a phenomenon common to all centrifugal pumps when operated at low capacity. At one half to one third of the best efficiency point (with exceptions), a secondary flow begins within the impeller whereby the fluid actually reverses direction and exits the eye and/or enters the discharge. This results in turbulence and small vortices. The high velocity at the core of the vortices results in low pressure, often below the vapor pressure of the fluid, and cavitation may ensue.

The bypass line is an effective means to safeguard against insufficient flow. Consequently, bypass capacity should be included within the capacity requirements to enable the end user to achieve the minimum flow requirement for a given refrigeration pump.

The following matrix highlights the minimum characteristics for Cornell's refrigerant product group:

Model	Minimum Flow	Model	Minimum Flow
1.5 CLB	12 USGPM	1.5HT	5 USGPM
1.5CB	13 USGPM	2HT	25 USGPM
1.5CBH	10 USGPM	2HTS	6 USGPM
2CBS	12 USGPM	2.5HT	25 USGPM
2CB	50 USGPM	3HT	25 USGPM
3CB	50 USGPM		
4CB	50 USGPM		