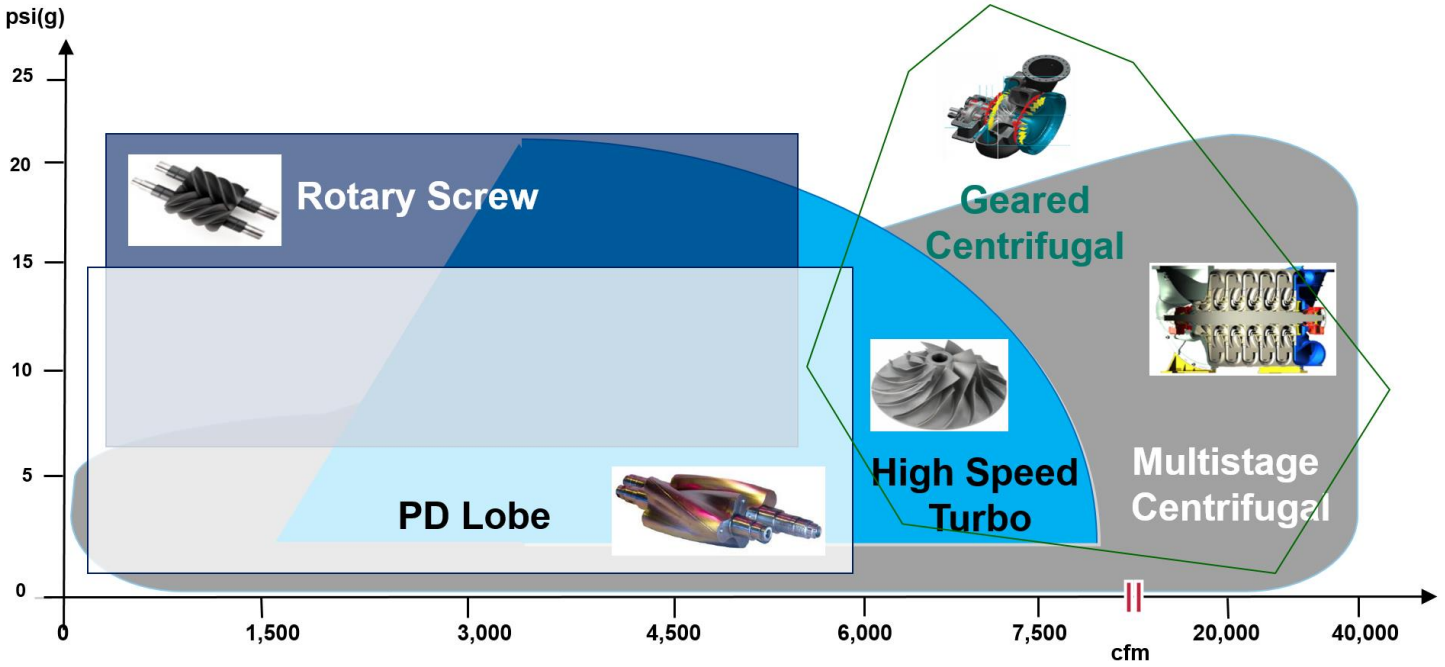
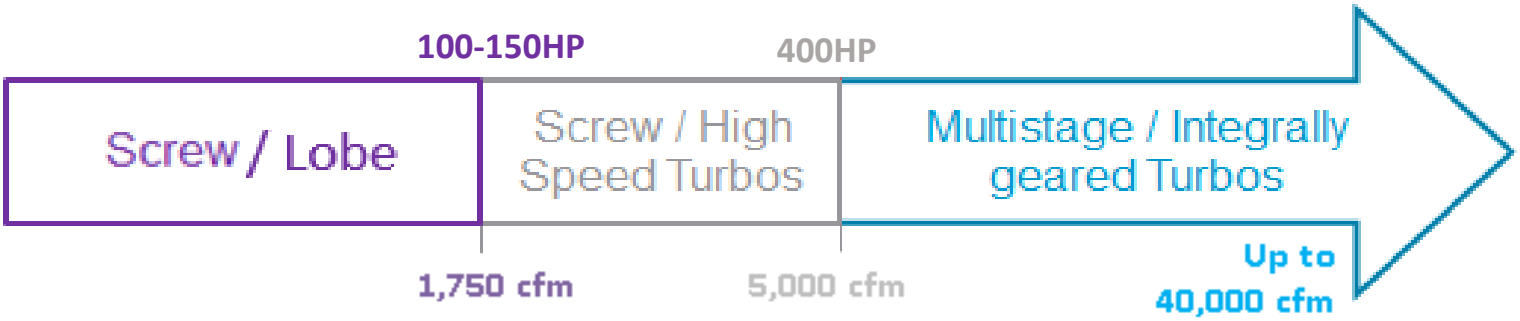


- Variable pressure applications: Lobe, Screw (avoid centrifugal machines!)

- Flow ranges:



- Pressure ranges:

  <7 psig : Lobe, Multistage
  7 to 14.5 psig : Lobe, Screw, Multistage, Turbo
  14.5 to 22 psig : Screw blower
  22 to 58 psig: Screw compressor

Table 1: Evaluation of blower technologies, ranked (1 is best).

Blower Type	Technology	Capital Cost	Maintenance Cost	Efficiency	Reliability	Turndown Range
Lobe	Positive Displacement	1	4	4	3	3
Screw	Positive Displacement	2	3	2	2	1
MSCB	Centrifugal	2	2	3	2	5
IGTB	Centrifugal	4	3	1	2	2
HSTB – Airfoil Bearing	Centrifugal	3	3	2	4	4
HSTB – Magnetic Bearing	Centrifugal	3	1	2	1	3

Table 2: Recommended blower technologies by application.

Acronym	Definition	Description	Air Requirements	Recommended Technology
Activated Sludge	-	Conventional aeration in tanks/lanes	Fixed pressure, variable flow	ALL
Aerated Lagoon	-	Aeration in ponds instead of tanks	Slightly varying pressure and flow	HSTB, MSCB, Lobe
SBR	Sequential Batch Reactor	Aerobic, anaerobic and sedimentation process in same tank	Greatly varying pressure and flow, intermittent	Screw, Lobe (NOT HSTB-Air)
MBBR	Moving Bed Biological Reactor	Reactor filled with plastic media giving a large biofilm surface	High flow, variable or fixed pressure	IGTB, Screw, HSTB, or MSCB
MBR	Membrane Bio Reactors	Activated sludge process combined with ultra-filtration	Fixed pressure, variable flow with intermittent air scour	Screw, HSTB-Mag, or Lobe
IFAS	Integrated Fixed Film Activated Sludge	Activated sludge process with large biofilm surface	Fixed pressure, slightly varying flow	HSTB, MSCB, Screw
Aerobic Digester	-	Reducing quantity and improving quality of sludge using air	Variable flow and pressure, intermittent	Screw, Lobe
Digester Gas	-	Exhausting digester gas for CHP, RNG, or flare	Methane with H2S, Variable flow, low pressure	MSCB, Lobe