

TECHNICAL BULLETIN

AIR RECEIVER PUMP-UP TIME CALCULATIONS

To estimate the time required to pump-up a given receiver or air system, the following formula may be used. The result disregards temperature differences and changes throughout the system. The formula gives therefore, a somewhat longer time than should actually be required.

- $T = \frac{Vr (P2 P1)}{Po (Acfm)}$
- Where: T is time required min.
 - Vr is tank (or system) volume-cu ft. (cu ft = gal/7.48)
 - Po is atmospheric pressure psiA
 - P1 is initial tank pressure psiA (*)
 - P2 is final tank pressure psiA (*)
 - Acfm is CFM air delivered by the compressor during the pump-up pressure change

AIR RECEIVER SIZE & CAPACITY (Gallon # 7.48 = Cubic Feet)

80 gal	(Approx. 20" X 63")	=	10.7 cu ft
120 gal	(Approx. 24" X 72")	=	16.04 cu ft
240 gal	(Approx. 30" X 84")	=	32.09 cu ft
400 gal	(Approx. 36" X 93")	=	53.48 cu ft
660 gal	(Approx. 42" X 117")	=	88.24 cu ft
1060 gal	(Approx. 48" X 144")	=	141.71 cu ft
1550 gal	(Approx. 60" X 190")	=	207.2 cu ft
2200 gal	(Approx. 60" X 220")	=	294.1 cu ft

(*) PSIA = ABSOLUTE PRESSURE (Gauge Pressure + Atmospheric Pressure)

400 Industrial Road A, Cranbrook, BC V1C 4Z3, Canada • T: 250.417.2396 • 1.855.417.2396 • F: 250.417.3183 info@appliedcompression.com • www.appliedcompression.com

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