CANADIAN PURCELL MACHINERY LTD.
"A World of Compressed Air & Gas Solutions"

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)