

To Determine "Approximate" Pump up Time:

$$TxP=A, FxB=C, RxC=D, A/D=M$$

Starting from zero pressure in tank and with tank service valve closed:

Multiply Tank size Gallon capacity (T) by cut off pressure (P). eg. 120 gallon x 175 PSI = (A) 21000

Factor value of 7.48 (F) x Atmosphere pressure (B) at your altitude (see chart). eg. 7.48 x 14.46 = (C) 108.16

Pump delivered air CFM rating (R) x (C) eg. 35 CFM x 108.16 = (D) 3785.6
(A) divided by (D) = (M) Pump time in minutes. eg. 21000 / 3785.6 = 5.55 minutes.

If your compressor is taking substantially longer to pump up than this calculation, pump head valves are most suspect and should be serviced. See our replacement valves on page 40-42. Other causes include worn or slipping belts, worn grooves in drive pulley, carbon build up or other restrictions in exhaust tube or check valve, and air leaks in tank or fittings.

Compressor RPM: Motor pulley pitch diameter x motor rpm
divided by Pump pulley diameter.

Motor Pulley: Pump pulley diameter x Pump RPM
divided by Motor RPM

Compressor Pulley: Motor pulley pitch diameter x Motor RPM
divided by Pump RPM

Motor RPM: Pump Pulley diameter x Pump RPM
divided by Motor pulley pitch diameter.

New

Altitude	psi
0 ft	14.7
500 ft	14.46
1000 ft	14.21
1500 ft	13.97
2000 ft	13.72
2500 ft	13.48
3000 ft	13.23
3500 ft	12.99
4000 ft	12.74
4500 ft	12.5
5000 ft	12.25
5500 ft	12
6000 ft	11.76

Air Consumption:

Impact 3/8" = 3 CFM

Impact 1/2" = 4 CFM

Impact 3/4" = 8 CFM

Impact 1" = 12 CFM

Orbital Sander = 5 CFM

Spray Gun = 4 to 9 CFM

Glossary of Common Compressor Terms.

CFM: Cubic Feet per Minute. Compressors are rated by CFM. It is very important that you know what the "delivered" CFM is at a specific pressure when comparing compressors. Some dealers may advertise CFM "displacement" which is always higher than CFM "delivered." Another key is the pressure given. A CFM rating at 40 PSI will always be a higher value than at 100 PSI or 175 PSI. The main thing to remember is Delivered CFM at the same Pressures when comparing performance.

PSI: Pounds Per Square Inch. "Pressure"

Single Phase: Electrical Power supply AC Voltage. Two power (hot) legs for 230 volt systems. One power (hot) leg for 115 volt systems.

Single stage: One or more pistons, each pumping one stroke of compression before storage in air tank.

Usually ranging in output performance of 100 to 125 PSI. For higher pressures, use Two Stage Compressors.

SCFM: Standard Cubic Feet per Minute is the volume flow rate of air corrected to "standardized" parameters of temperature, pressure and humidity.

Three Phase: Electrical Power supply AC Voltage. Three power (hot) legs.

This is the preferred power source for Commercial and Industrial applications. Described as 208, 230 or 460 volt systems.

Two Stage: Two or more pistons that involve compression and recompression in two cycles between a larger low pressure piston and a smaller high pressure piston to achieve higher pressures.

The majority of Reciprocating Pumps used in automotive or industrial use are of the Two Stage type pump, averaging 175 PSI output performance.

Forcing a Single Stage pump to produce higher pressure, may damage the pump, or motor and will cause overheating and premature (pump head) valve failure.

Pump Bolt Down Dimensions

(For Pumps shown on Pages 1,2,3 and 5) (Shown in inches)

Model	Flywheel	Bolt L-R	Bolt F-B	Belt
UB02	6	4-1/2	3-1/8	1A
UB10	10-1/2	6-3/4	3-1/2	1A
SZ-MSL10	10	5-7/8	5-1/2	1A
UB20	10-1/2	8-1/2	4-3/4	1A
UH30	12-5/8	7-1/4	5-3/4	1A
UH30D	10	5-7/8	5-1/2	1A
UHT55	15	7-1/2	6-3/4	1B
UT50 / GL5 / EC5	17	9	7-3/4	2B
UT100 / GL10 / EC10	19	9-5/8	9-1/8	2B
EC15	19-3/4	12-1/2	8-3/4	2B
R321	13-3/4	9	6-1/4	2A
R332HU	18	10-5/8	6-1/4	3B
R335HU / GL335HU	13-3/4	9	6-1/4	2B
R352HU	25-1/4	14-1/2	10	4B
R452HU / GL452HU	18	10-5/8	6-1/4	3B
R462HU / GL462HU	25-1/4	16	10	4B
LCOA / K12	10-1/4	6-1/2	5	1A
LCOB / K17	11	7-1/8	5-1/4	1A
LCOC / K22	15	8-1/8	6-3/8	2A

*Bolts are On Center. L-R= Left To Right (facing flywheel), F-B= Front to Back

Pipe Chart

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Use pipe chart to select proper pipe size.

New

Add 10 ft for every turn in piping.

Determine total SCFM output of compressor and the farthest point of use for ideal pipe size.

Alternate method is to determine maximum consumption of air at farthest point of use.

The HP Column corresponds to the average SCFM rating of compressor.

SCFM	25'	50'	75'	100'	150'	200'	300'	500'	1000'	HP
4	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	1
12	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1-1/4"	3
20	3/4"	3/4"	3/4"	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	5
30	3/4"	3/4"	1"	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	7.5
40	3/4"	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	10
60	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	15
80	1"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"	2"	20
100	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	25
120	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	30
160	1-1/4"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	3"	40
200	1-1/2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"	3"	50
240	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	60
300	2"	2"	2"	2-1/2"	2-1/2"	3"	3"	3"	3-1/2"	75
400	2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	3"	3-1/2"	4"	100
500	2"	2-1/2"	2-1/2"	3"	3"	3"	3-1/2"	3-1/2"	4"	125