



SIMPLIFIED FLUID HANDLING

FPZ REGENERATIVE BLOWERS

MS-MD SERIES WITH EXPLOSION PROOF MOTORS





FPZ has been manufacturing regenerative blowers for the movement of air and technical gases since 1975 and has earned a worldwide reputation for quality and service. FPZ's standard line of regenerative blowers with explosion proof motors are built to withstand extremely harsh environments.

All blowers with explosion proof motors are assembled in our Saukville, WI USA facility.

Standard XP features include:

Corrosion Protection

All aluminum components in the wetted areas are anodized for corrosion resistance. In addition, all internal bolts are stainless steel. The anodizing process is in conformity to UNI EN ISO 7599. Anodizing is a highly effective treatment that allows our blowers to operate in harsh conditions.



Sealing

To minimize leakage into or out of the blower, FPZ applies our TMS process. The TMS process begins with impregnating aluminum components in the wetted areas with a polyester resin. The resin is a specially formulated, 100% solids, styrene-free polyester resin and provides a virtually indestructible seal. This polyester resin seals the casting porosity and prevents leakage through the casting.

All mating surfaces and bolts that are in the wetted areas have a gasket or seal to minimize leakage. Leakage is estimated at <15 cm³/ min. After assembly, each blower is leak tested.



FPZ CUSTOMER APPROACH



TECHNICAL FEASIBILITY
ASSESSMENT



BLOWER
SELECTION



CUSTOMER
SERVICE



AFTER SALES
ASSISTANCE

Explosion Proof Motors

XP motors are UL listed for Class 1, Division I, Group D, Class II Groups F & G environments.

XP motors on GOR motor blowers are UL listed for Class 1, Division 1, Group D, Class II Groups E, F and G

All standard explosion proof motors are equipped with normally closed thermal protectors and are suitable for use with a VFD*.

Other features

1/8" gauge ports are included on the inlet and outlet silencers (optional for R series).

3-Year Warranty.

Mountable in any plane.

Bearings are isolated from gas stream



**NEMA
Premium**

*Pneumatic performance will change with speed. Make sure that the blower is operated in safe pneumatic and electrical limits. Contact FPZ for variable speed tables.



Electric motor temperatures codes for standard FPZ blowers with explosion proof motors

Motor HP	Temperature code	Maximum motor Surface Temperature		Service Factor*	Insulation Class
		Deg C	Deg F		
1.5	T3C	160	320	1.15	F
2	T3C	160	320	1.15	F
3	T3C	160	320	1.15	F
5	T3C	160	320	1.15	F
7.5	T2B	260	500	1.15	F
10	T2B	260	500	1.15	F
15	T3C	160	320	1.15	F
20	T3C	160	320	1.15	F
25	T3C	160	320	1.15	F
30	T3C	160	320	1.15	F
40	T3C	160	320	1.15	F

** NOTE: if used with a Variable Frequency Drive, reduce service factor to 1.0.*

Class I Substances and atmospheres

Substance or atmosphere	Minimum Ignition Temperature	Substance or atmosphere	Minimum Ignition Temperature
Group A		Group D (continued)	
acetylene	305° C (581° F)	ethyl acetate	426° C (800° F)
Group B		ethylene dichloride	413° C (775° F)
butadiene	420° C (788° F)	gasoline	280° C (536° F)
ethylene oxide	570° C (1058° F)	heptane	204° C (399° F)
hydrogen	500° C (932° F)	hexane	225° C (437° F)
Group C		methane (natural gas)	537° C (999° F)
acetaldehyde	175° C (347° F)	methanol (methyl alcohol)	464° C (867° F)
cyclopropane	498° C (928° F)	3-methyl-1-butanol (isoamyl alcohol)	350° C (662° F)
diethyl ether	180° C (356° F)	methyl ethyl ketone	404° C (759° F)
ethylene	450° C (842° F)	methyl isobutyl ketone	448° C (840° F)
isoprene	395° C (743° F)	2-methyl-1-propanol (isobutyl alcohol)	415° C (780° F)
unsymmetrical dimethyl hydrazine		2-methyl-2-propanol (tertiary butyl alcohol)	478° C (892° F)
(UDMH) 1, 1-dimethyl hydrazine)	249° C (480° F)	octane	206° C (403° F)
Group D		petroleum naphtha	288° C (550° F)
acetone	465° C (869° F)	1-pentanol (amyl alcohol)	300° C (572° F)
acrylonitrile	481° C (898° F)	propane	450° C (842° F)
ammonia	651° C (1204° F)	1-propanol (propyl alcohol)	412° C (775° F)
benzene	498° C (928° F)	2-propanol (isopropyl alcohol)	399° C (750° F)
butane	287° C (550° F)	propylene	455° C (851° F)
1-butanol (butyl alcohol)	343° C (650° F)	styrene	490° C (914° F)
2-butanol (secondary butyl alcohol)	405° C (761° F)	vinyl acetate	402° C (756° F)
n-butyl acetate	425° C (797° F)	vinyl Chloride	472° C (882° F)
isobutyl acetate	421° C (790° F)	p-xylene	528° C (984° F)
ethane	472° C (882° F)		
ethanol (ethyl alcohol)	363° C (685° F)		

FOR REFERENCE ONLY

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SCL R30-MD	Two stage R series blower.	65	190	150	
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MS series Datasheet

SCL e07-MS	Single - stage e series blower.	307	160	140	8-9
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SCL e10-MS	Single - stage e series blower.	584	200	140	
SCL e11-MS	Single - stage <u>e series</u> blower.	639	200	140	
SCL e12-MS	Single - stage <u>e series</u> blower.	722	170	140	

MD series Datasheet

SCL e07-MD	Two- stage e series blower.	147	260	180	10-11
SCL e08-MD	Two- stage e series blower.	177	260	180	
SCL e09-MD	Two- stage e series blower.	231	280	180	
SCL e10-MD	Two- stage e series blower.	278	240	200	
SCL e11-MD	Two- stage e series blower.	319	260	180	
SCL e12-MD	Two- stage e series blower.	367	260	170	

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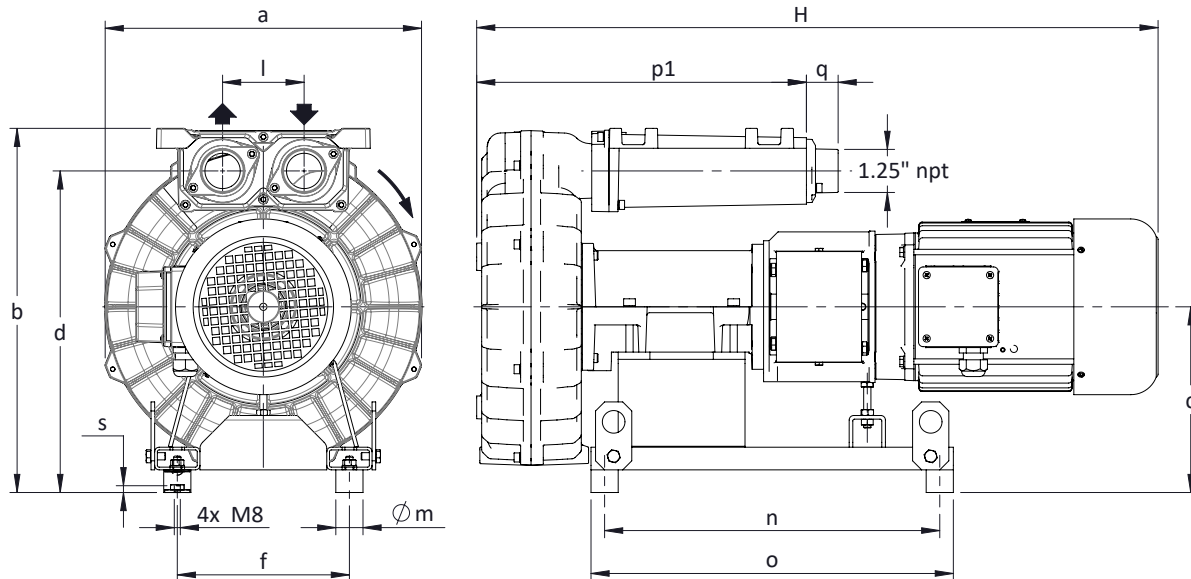
Disclaimer

The information contained in this catalog is based on information that we believe to be correct. It is the users responsibility to determine the suitability of the product for the application they are used in and the user assumes all risk and liability whatsoever in connection therewith.



R Series

Model	Max. Flow (60 Hz) cfm	Power (60 Hz) Hp	Voltage (60 Hz) V	Amperage (60 Hz) A	ΔP max Pressure (60 Hz) In. WG	ΔP max Vacuum (60 Hz) In. HG	Noise ¹ (60 Hz) dB(A)	Weight Lbs.
SCL R20-MD-GOR-C-1.5 XP-1	41	1.5	230/460	2.0 / 4.0	160	10.3	73	128
SCL R30-MD-GOR-C-2 XP-1	65	2	230/460	5.2 / 2.6	140	11.1	78	134
SCL R40-MD-GOR-C-3 XP-1	78	3	230/460	7.4 / 3.7	140	11.1	81	195
SCL R40-MD-GOR-C-5 XP-1		5	230/460	11.6 / 5.8	200	-	81	257



Dimensions in Inches -

Model	HP	Size	a	b	c	d	f	H	m	n	o	p1	q	s
SCLR20-MD-GOR	1.5	145TC	11.14	14.06	7.48	12.20	6.69	26.5	1.18	14.57	15.75	13.58	0.71	0.3
SCL R30-MD-GOR	2	145TC	12.56	14.84	7.48	12.99	6.69	26.8	1.18	14.57	15.75	13.94	0.71	0.3
SCL R40-MD-GOR	3	182TC	13.74	15.83	8.07	13.98	7.48	31.1	1.18	14.57	15.75	14.33	0.71	0.3
	5	184TC						31.1						

INSTALLATION

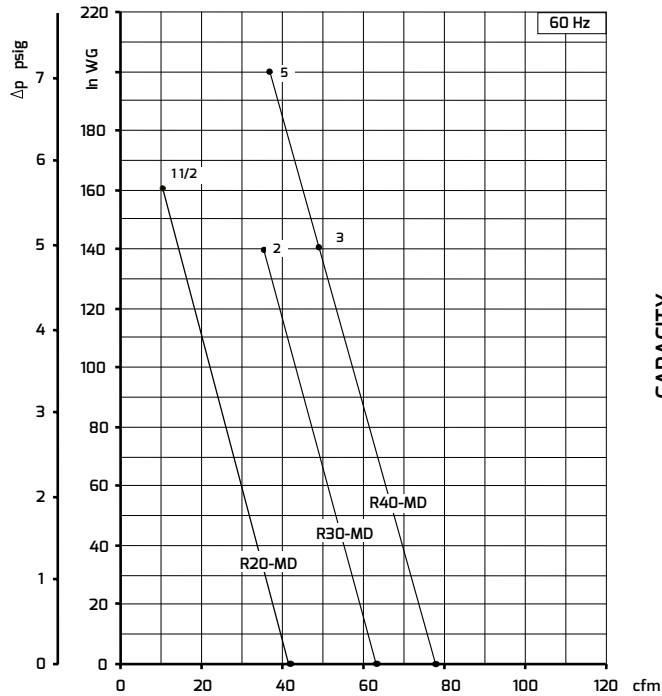
- For proper use, the blower should be equipped with Inlet FILTER and Safety Relief VALVE; other accessories available on request
- Ambient temperature from -15° to +40°C (+5° to +104° F).
- Specifications subject to change without notice.
- Before installation read carefully all instructions

¹ Noise measured at 1 m distance with inlet and outlet ports piped, in accordance to ISO 3744.

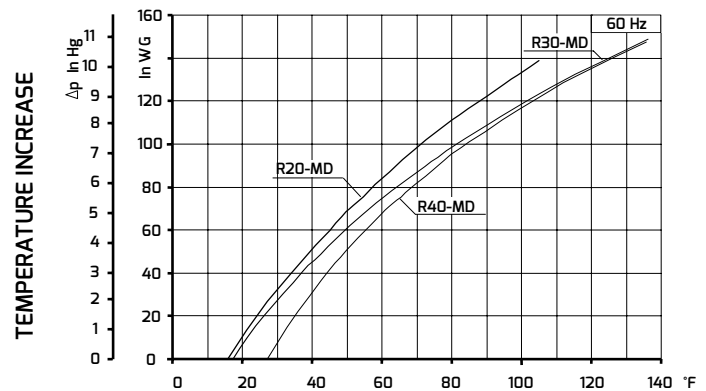
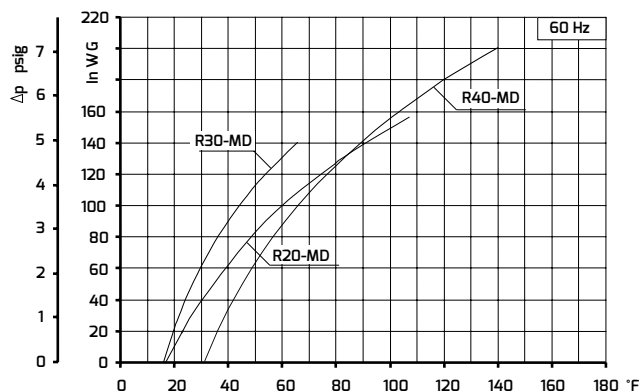
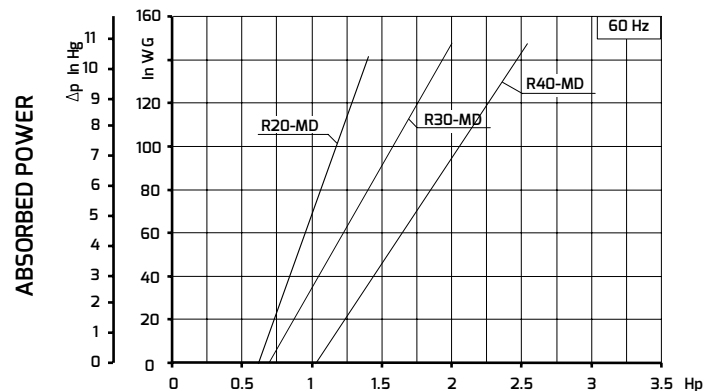
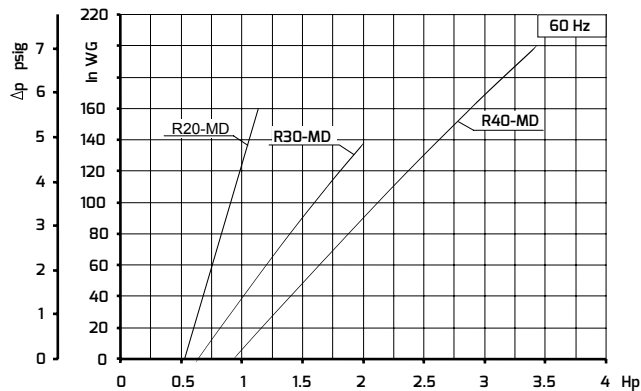
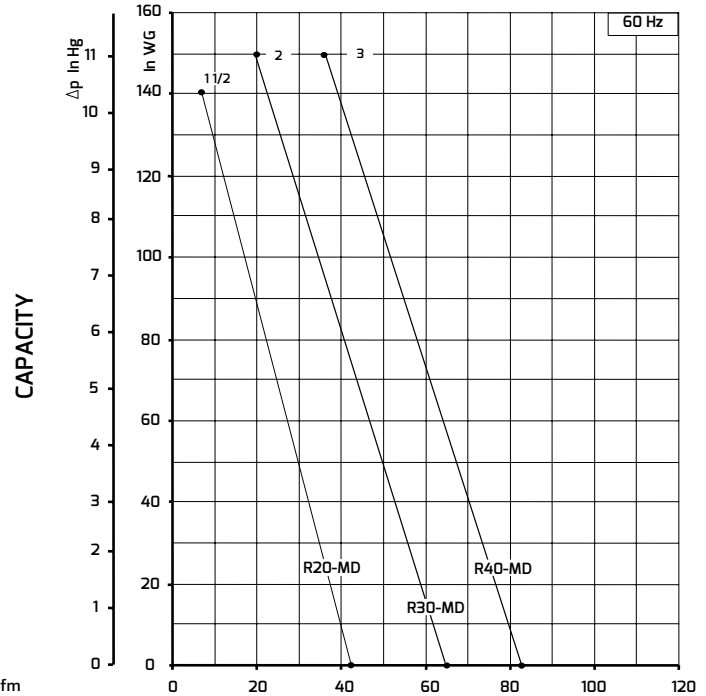


R SERIES XP VERSION

PRESSURE



VACUUM



Curves refer to air at 68°F temperature and 29.92 In Hg atmospheric pressure (abs) measured at inlet port.
Values for flow, power consumption and temperature rise: +/-10% tolerance.
Data subject to change without notice.

MS Series

Model	Max. Flow (60 Hz) cfm	Power (60 Hz) Hp	Voltage (60 Hz) V	Amperage (60 Hz) A	ΔP max Pressure (60 Hz) In. WG	ΔP max Vacuum (60 Hz) In. WG	Noise ¹ (60 Hz) dB(A)	Weight Lbs.
SCL e07-MS-7.5-3 XP-1	307	7.5	208-230/460	18.9-17.8 / 8.9	110	110	75	252
SCL e07-MS-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	160	140	75	275
SCL e08-MS-7.5-3 XP-1	394	7.5	208-230/460	18.9-17.8 / 8.9	70	80	77	244
SCL e08-MS-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	110	110	77	282
SCL e08-MS-GOR-15-3 XP-1		15	230/460	36 / 18	170	130	77	521
SCL e09-MS-10-3 XP-1	471	10	208-230/460	24.3-22.4 / 11.2	80	90	79	321
SCL e09-MS-GOR-15-3 XP-1		15	230/460	36 / 18	140	140	79	503
SCL e09-MS-GOR-20-3 XP-1		20	230/460	48 / 24	180	-	79	516
SCL e10-MS-10-3 XP-1	584	10	208-230/460	24.3-22.4 / 11.2	50	60	81	329
SCL e10-MS-GOR-15-3 XP-1		15	230/460	36 / 18	100	110	81	542
SCL e10-MS-GOR-20-3 XP-1		20	230/460	48 / 24	160	140	81	527
SCL e10-MS-GOR-25-3 XP-1		25	230/460	58 / 29	200	-	81	736
SCL e11-MS-GOR-15-3 XP-1	639	15	230/460	36 / 18	70	80	83	562
SCL e11-MS-GOR-20-3 XP-1		20	230/460	48 / 24	120	130	83	575
SCL e11-MS-GOR-25-3 XP-1		25	230/460	58 / 29	200	-	83	756
SCL e11-MS-GOR-30-3 XP-1		30	230/460	70 / 35	200	-	83	787
SCL e12-MS-GOR-15-3 XP-1	722	15	230/460	36 / 18	50	60	84	564
SCL e12-MS-GOR-20-3 XP-1		20	230/460	48 / 24	90	110	84	577
SCL e12-MS-GOR-25-3 XP-1		25	230/460	58 / 29	130	140	84	776
SCL e12-MS-GOR-30-3 XP-1		30	230/460	70 / 35	170		84	789

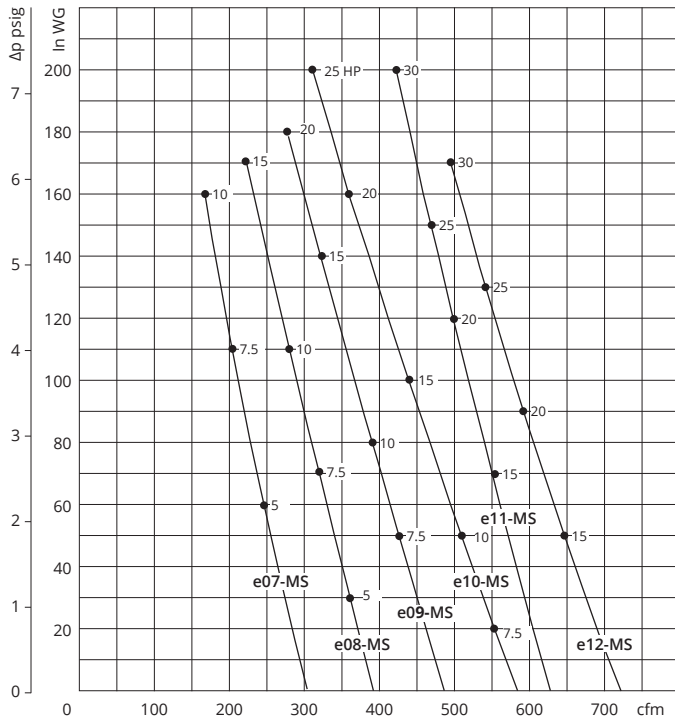
INSTALLATION

- For proper use, the blower should be equipped with Inlet FILTER and Safety Relief VALVE; other accessories available on request
- Ambient temperature from -15° to +40°C (+5° to +104° F).
- Specifications subject to change without notice.
- Before installation read carefully all instructions .

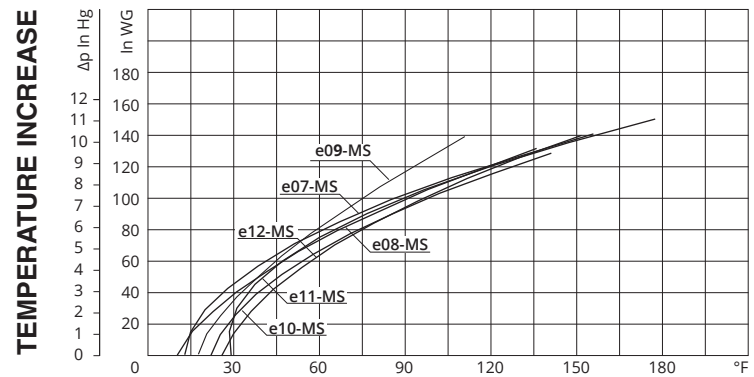
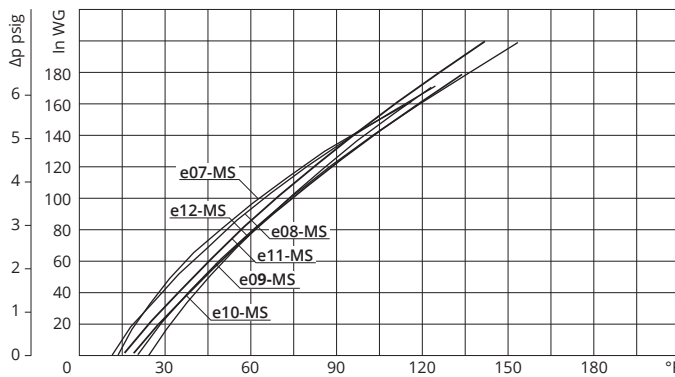
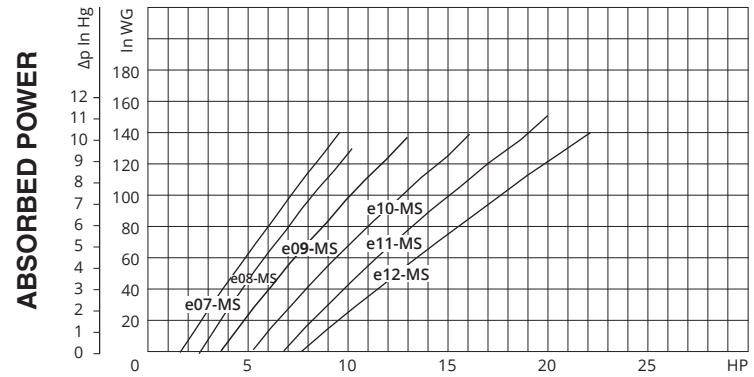
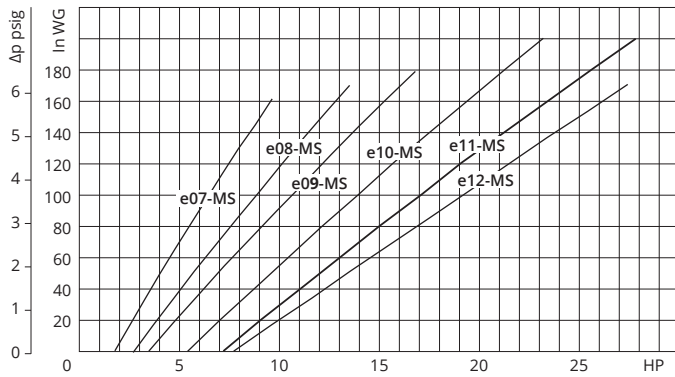
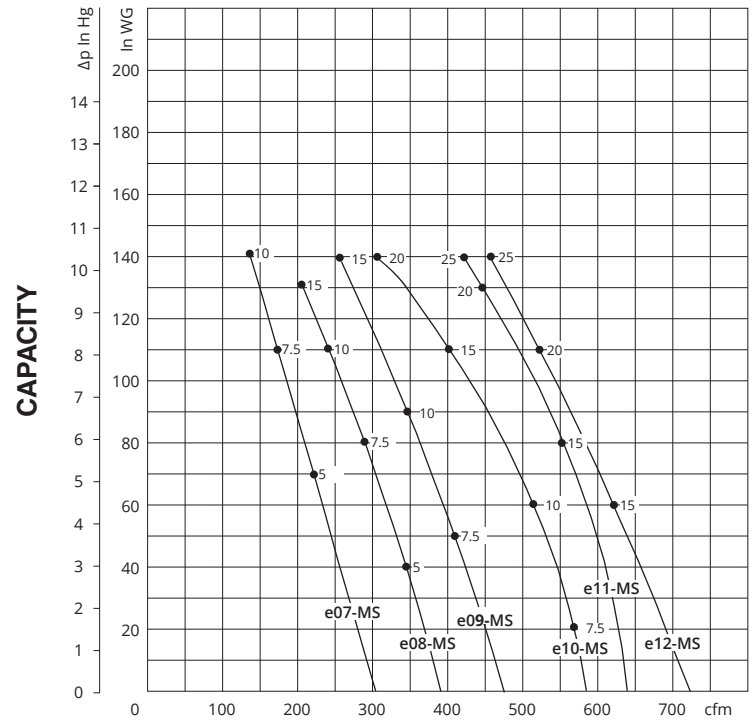
¹ Noise measured at 1 m distance with inlet and outlet ports piped, in accordance to ISO 3744.

MS SERIES XP VERSION

PRESSURE



VACUUM



Curves refer to air at 68°F temperature and 29.92 In Hg atmospheric pressure (abs) measured at inlet port.
Values for flow, power consumption and temperature rise: +/-10% tolerance.
Data subject to change without notice.

MD Series

Model	Max. Flow (60 Hz) cfm	Power (60 Hz) Hp	Voltage (60 Hz) V	Amperage (60 Hz) A	ΔP max Pressure (60 Hz) In. WG	ΔP max Vacuum (60 Hz) In. HG	Noise ¹ (60 Hz) dB(A)	Weight Lbs.
SCL e07-MD-7.5-3 XP-1	147	7.5	208-230/460	18.9-17.8 / 8.9	240	180	77	215.9
SCL e07-MD-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	260	-	77	232.8
SCL e08-MD-7.5-3 XP-1	177	7.5	208-230/460	18.9-17.8 / 8.9	140	160	78	242.5
SCL e08-MD-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	200	180	78	266.8
SCL e08-MD-GOR-15-3 XP-1		15	230/460	36 / 18	260	-	78	
SCL e09-MD-10-3 XP-1	231	10	208-230/460	24.3-22.4 / 11.2	180	190	79	304.7
SCL e09-MD-GOR-15-3 XP-1		15	230/460	36 / 18	280	-	79	537
SCL e10-MD-10-3 XP-1	278	10	208-230/460	24.3-22.4 / 11.2	140	150	80	310.2
SCL e10-MD-GOR-15-3 XP-1		15	230/460	36 / 18	240	200	80	544
SCL e11-MD-GOR-15-3 XP-1	319	15	230/460	36 / 18	180	180	80	565
SCL e11-MD-GOR-20-3 XP-1		20	230/460	48 / 24	260	-	80	578
SCL e12-MD-GOR-15-3 XP-1	367	15	230/460	36 / 18	240	170	82	568
SCL e12-MD-GOR-20-3 XP-1		20	230/460	48 / 24	260	-	82	581

INSTALLATION

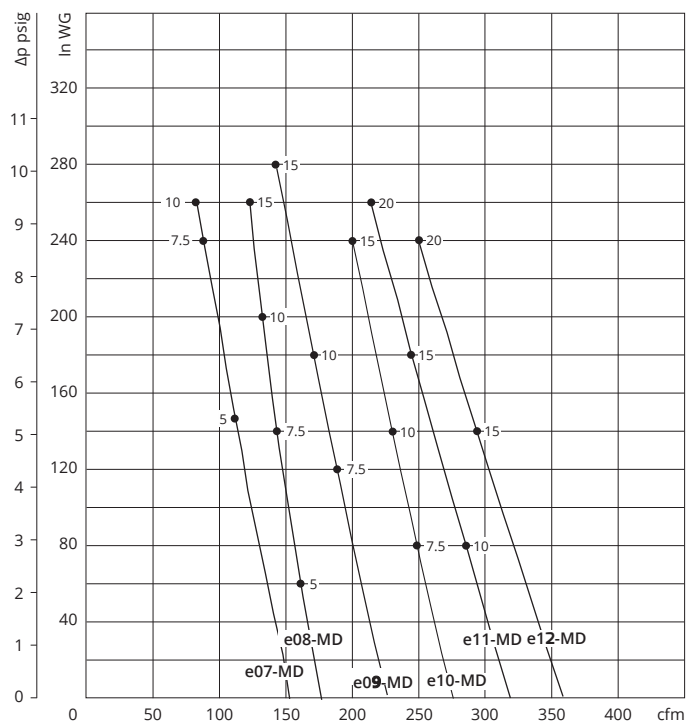
- For proper use, the blower should be equipped with Inlet FILTER and Safety Relief VALVE; other accessories available on request
- Ambient temperature from -15° to +40°C (+5° to +104° F).
- Specifications subject to change without notice.
- Before installation read carefully all instructions.

¹ Noise measured at 1 m distance with inlet and outlet ports piped, in accordance to ISO 3744.

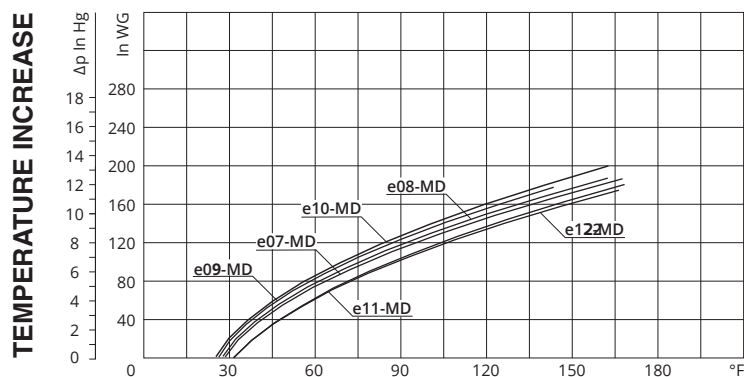
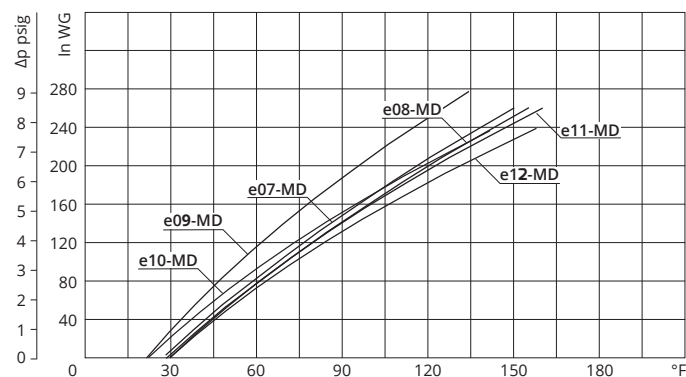
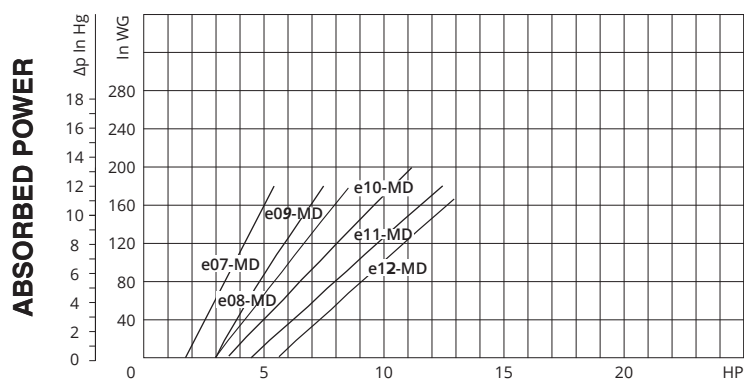
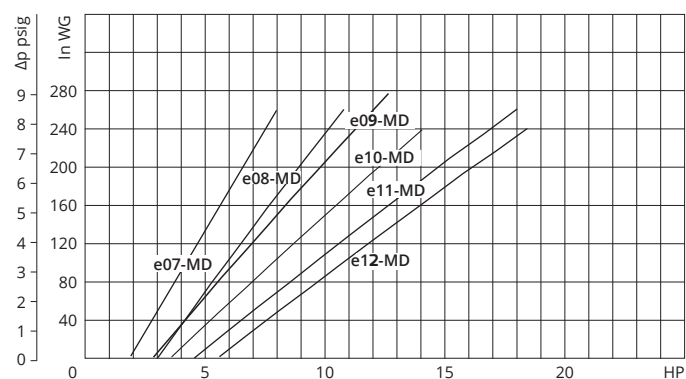
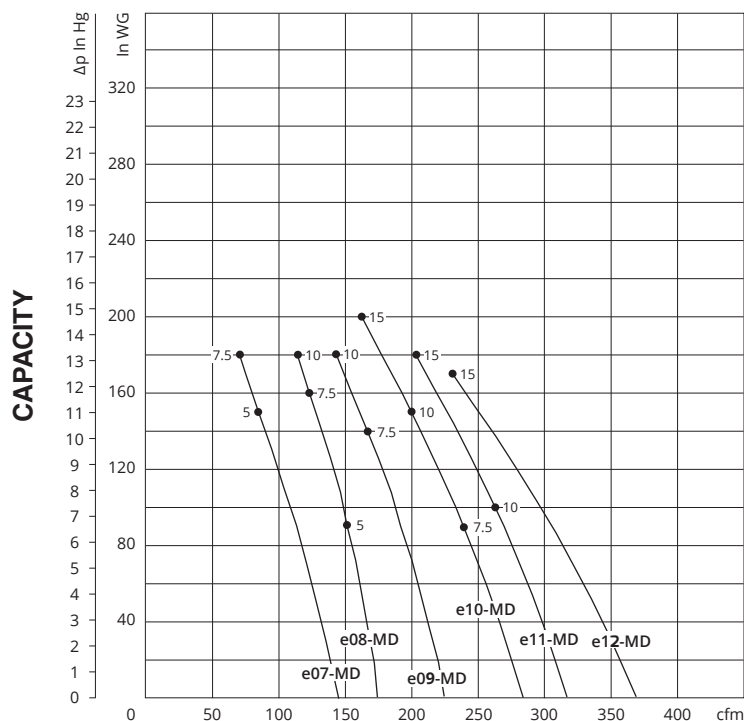
MD SERIES

XP VERSION

PRESSURE

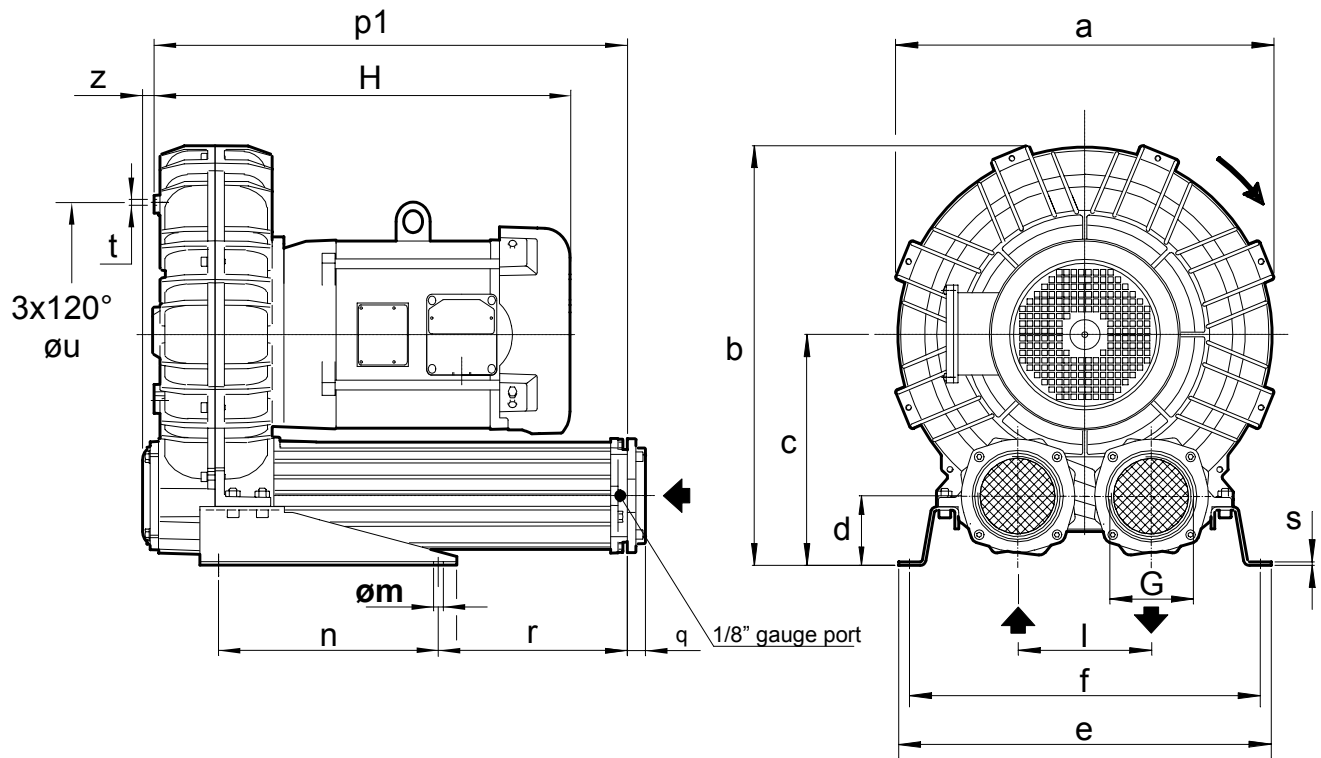


VACUUM



Curves refer to air at 68°F temperature and 29.92 In Hg atmospheric pressure (abs) measured at inlet port.
 Values for flow, power consumption and temperature rise: +/-10% tolerance.
 Data subject to change without notice.

MS / MD SERIES
XP VERSION
DIMENSIONS (7.5 & 10 HP)



Dimensions in Inches - For reference only

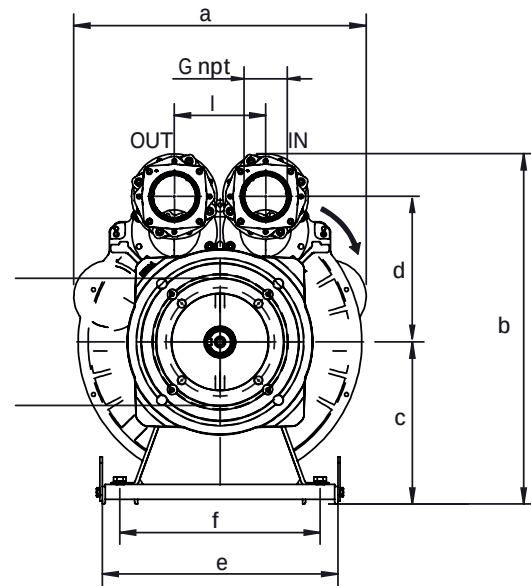
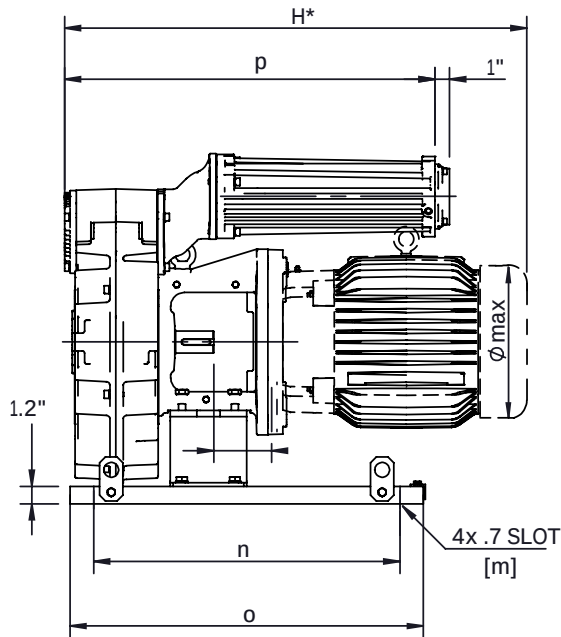
Model	HP	G	a	b	c	d	e	f	H	i
SCL e07-MS	7.5 & 10	3" NPT	17.5	19.4	10.6	3.3	18.4	17.2	23	6.10
SCL e07-MD	7.5 & 10	2" NPT	17.5	19.4	10.6	3.3	18.4	17.2	23	6.10
SCL e08-MS	7.5 & 10	3" NPT	19.5	20.1	10.6	3.3	18.8	17.6	23	6.10
SCL e08-MD	7.5 & 10	2" NPT	19.2	20.1	10.6	3.3	18.8	17.6	23	6.10
SCL e09-MS	7.5 & 10	4" NPT	20.4	22.6	12.4	3.8	20	18.8	24.2	7.2
SCL e09-MD	10	4" NPT	20.4	22.6	12.4	3.8	20	18.8	24.2	7.2
SCL e10-MD	10	4" NPT	21.2	23	12.4	3.8	20	18.8	24.2	7.2

Model	m	n	p1	q	r	s	t	u	z
SCL e07-MS	0.5	11.8	20.10	1.0	5.3	0.2	M8	11.6	0.7
SCL e07-MD	0.5	11.8	14.80	0.7	-	0.2	M8	11.6	0.7
SCL e08-MS	0.5	11.8	20.10	1.0	5.3	0.2	M8	12.2	0.7
SCL e08-MD	0.5	11.8	14.30	0.7	-	0.2	M8	12.2	0.7
SCL e09-MS	0.5	11.8	23.10	1.0	7.8	0.2	M8	14.1	0.7
SCL e09-MD	0.5	11.8	23.50	1.0	8.2	0.2	M8	14.1	0.7
SCL e10-MD	0.5	11.8	23.50	1.0	8.2	0.2	M8	14.1	0.7

MS / MD GOR SERIES

XP VERSION

DIMENSIONS (15 - 40 HP)



MS Series

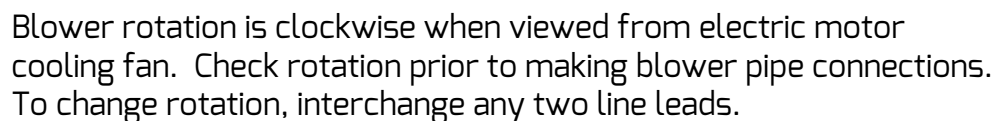
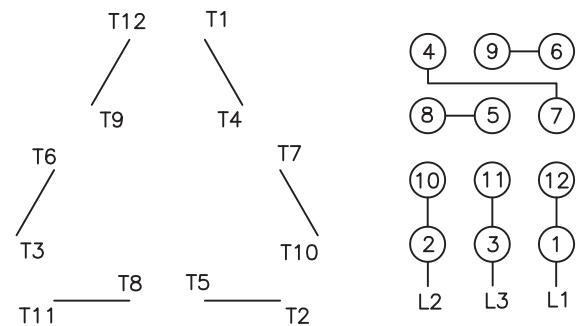
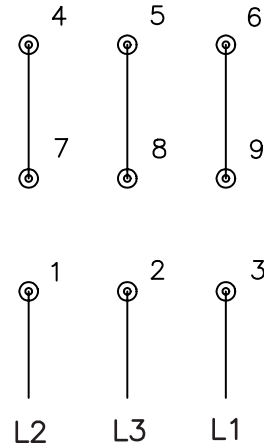
Model	HP	Size	G	a	b	c	d	e	f	i	m	n	o	p
SCL e08-MS-GOR	15	254-6TC	3" NPT	19.5	23.4	9.8	9.7	15.8	13.4	6.1	0.7	20.5	23.6	24.7
SCL e09-MS-GOR	15 & 20	254-6TC	4" NPT	20.4	26.4	12.3	10.8	18.1	15.7	7.2	0.7	23.6	26.8	28.3
SCL e10-MS-GOR	15 & 20	254-6TC	4" NPT	21.2	26.4	12.3	10.8	18.1	15.7	7.2	0.7	23.6	26.8	28.3
	25	284-6TSC		21.2	26.4	12.3	10.8	18.1	15.7	7.2	0.7	23.6	26.8	28.3
SCL e11-MS-GOR	15 & 20	254TC	4" NPT	22.3	27.2	12.3	11.7	18.1	15.7	7.9	0.7	23.6	26.8	28.7
	30	284TC			27.2	12.3	11.7	18.1	15.7	7.9	0.7	23.6	26.8	28.7
SCL e12-MS-GOR	15 & 20	254TC			27.2	12.3	11.7	18.1	15.7	7.9	0.7	23.6	26.8	28.7
	30	284TC			27.2	12.3	11.7	18.1	15.7	7.9	0.7	23.6	26.8	28.7
	40	324-6TSC			27.2	12.3	11.7	18.1	15.7	7.9	0.7	23.6	26.8	28.7

MD Series

Model	HP	Size	G	a	b	c	d	e	f	i	m	n	o	p
SCL e08-MD-GOR	15	254-6TC	2" NPT	19.2	21.1	10.8	7.4	15.8	13.4	6.1	0.7	20.5	23.6	15.0
SCL e09-MD-GOR	15	254-6TC	3" NPT	20.4	26.4	12.3	14.1	18.1	15.8	7.2	0.7	23.6	26.8	28.7
SCL e10-MD-GOR	15	254-6TC	4" NPT	21.2	26.4	12.3	10.8	18.1	15.8	7.2	0.7	23.6	26.8	28.7
SCL e11-MD-GOR	15	254-6TC	4" NPT	21.4	27.2	12.3	11.7	18.1	15.8	7.9	0.7	23.6	26.8	29.0
	20	254-6TC	4" NPT	22.3	27.2	12.3	11.7	18.1	15.8	7.9	0.7	23.6	26.8	29.0
SCL e12-MD-GOR	15 & 20	254-6TC	4" NPT	22.3	27.2	12.3	11.7	18.1	15.8	7.9	0.7	23.6	26.8	29.0
	25	284-6TSC	4" NPT	22.3	27.2	12.3	11.7	18.1	15.8	7.9	0.7	23.6	26.8	29.0

* H dimension subject to change based on installed motor.

All dimensions are in inches and for REFERENCE ONLY and subject to change without notice.



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TECHNICAL Engineering Information

PSI	In. H ₂ O	In. Hg	mBar	mmH ₂ O
1	27.68	2.04	68.95	703.0
1.5	41.5	3.05	103.43	1054.5
2	55.4	4.07	137.90	1406.0
2.5	69.2	5.09	172.38	1757.5
3	83.0	6.11	206.85	2109.0
3.5	96.9	7.13	241.33	2460.5
4	110.7	8.14	275.80	2812.0
4.5	124.6	9.16	310.28	3163.5
5	138.4	10.18	344.75	3515.0
5.5	152.2	11.20	379.23	3866.5
6	166.1	12.22	413.70	4218.0
6.5	179.9	13.23	448.18	4569.5
7	193.8	14.25	482.65	4921.0
7.5	207.6	15.27	517.13	5272.5
8	221.4	16.29	551.60	5624.0
8.5	235.3	17.31	586.08	5975.5
9	249.1	18.32	620.55	6327.0
9.5	263.0	19.34	655.03	6678.5
10	276.8	20.36	689.50	7030.0

Pressure				
In. H ₂ O	x	0.03613	=	psi
In. H ₂ O	x	0.07355	=	In. Hg
mbar	x	0.4019	=	In. H ₂ O
psi	x	2.036	=	In. Hg

Flow				
m ³ /h	x	0.588	=	cfm
lpm	x	0.03528	=	cfm
cfm	x	1.699	=	m ³ /h
cfm	x	28.32	=	lpm

Length				
Feet	x	12	=	Inches
Inches	x	2.54	=	cm
Feet	x	0.3048	=	meters

Barometric pressure varies in direct proportion to altitude

Example #1 – If a blower is required to deliver 2 psig at 5000 feet, what pressure at standard air is required?

$$\text{Pressure} = 29.92 / 24.89 \times 2 = 2.4 \text{ psig}$$

Example #2– If a blower is required to deliver 2 psig at standard air, what pressure will it deliver at 5000 feet?

$$\text{Pressure} = 24.89 / 29.92 \times 2 = 1.66 \text{ psig}$$

Altitude Versus Barometric Pressure

Altitude Feet	Pressure		Altitude Feet	Pressure		Altitude Feet	Pressure	
	In. Hg.	Psia		In. Hg.	Psia		In. Hg.	Psia
0	29.92	14.70	1500	28.33	13.90	7000	23.09	11.34
500	29.38	14.43	2000	27.82	13.67	7500	22.65	11.12
600	29.28	14.38	2500	27.31	13.41	8000	22.22	10.90
700	29.18	14.33	3000	26.81	13.19	8500	21.80	10.70
800	29.07	14.28	3500	26.32	12.92	9000	21.38	10.50
900	28.97	14.23	4000	25.84	12.70	9500	20.98	10.90
1000	28.86	14.18	4500	25.36	12.45	10000	20.58	10.10
1100	28.75	14.09	5000	24.89	12.23	10500	20.18	9.91
1200	28.65	14.04	5500	24.43	12.00	11000	19.79	9.72
1300	28.54	13.99	6000	23.98	11.77	11500	19.41	9.53
1400	28.44	13.94	6500	23.53	11.56	12000	19.03	9.35

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