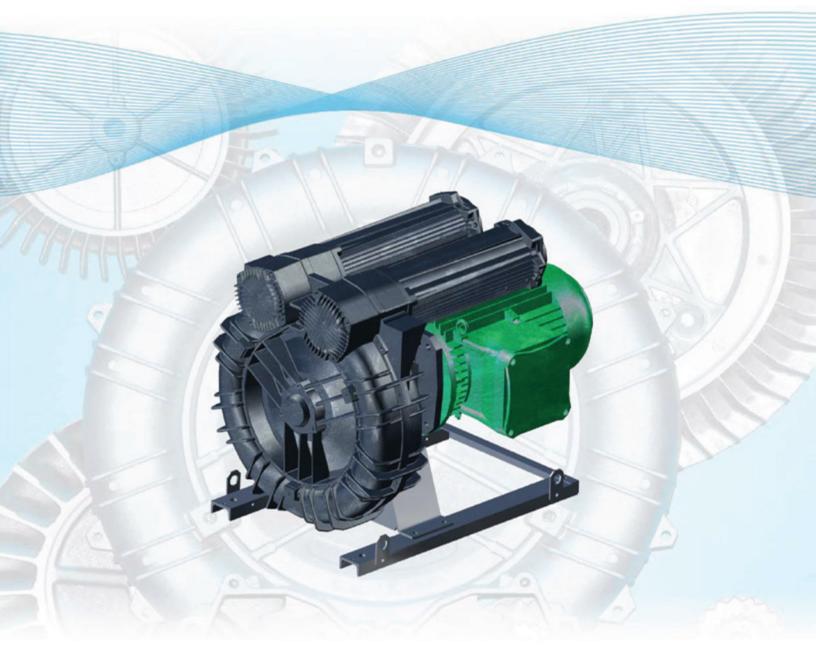


FPZ REGENERATIVE BLOWERS

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 FEASABILITY
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







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

FOR REFERENCE ONLY



SS2306

Table of Contents

R series - MD	Description	Max CFM	Max Pressure (In H ₂ 0)	Max Vacuum (In Hg.)	Page(s)		
SCL R20-MD	Two stage R series blower	41	160	10.3			
SCL R30-MD	Two stage R series blower	6-7					
SCL R40-MD	Two stage R series blower						
MS series Datashee	t						
SCL K07-MS	Single - stage <u>K series</u> blower.	294	160	8.8			
SCL KO8-MS	Single - stage <u>K series</u> blower.	381	170	9.6			
SCL KO9-MS							
SCL K10-MS	Single - stage K series blower. 556 200 9.6						
SCL e11-MS	Single - stage <u>e series</u> blower. 639 200 10.3						
SCL e12-MS	Single - stage <u>e series</u> blower.	Single - stage <u>e series</u> blower. 722 150 10.3					
MD series Datashee	t						
SCL K07-MD	Two- stage K series blower.	128	240	12			
SCL KO8-MD	Two- stage K series blower. 167 220 13						
SCL KO9-MD	Two- stage K series blower.	220	165	12	9-10		
SCL K10-MD	Two- stage K series blower.	274	115	9	0 0		
SCL e11-MD	Two- stage e series blower.	319	260	13			
SCL K12-MD	Two- stage K series blower.	335	240	13			
Dimensions							
SCL K07-10 MS	Direct drive blower dimensions (7.5 8	€ 10 HP)			11		
SCL K07-10 MD	Direct diffe stower difficilisions (7.5	x 10 111 /					
SCL KO8-10-MS-GOR							
SCL e11-12 MS-GOR	Direct Coupled blower dimensions				12		
SCL K11-12 MD-GOR							
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Altitude chart and conversion	n factors				15		

Disclaimer

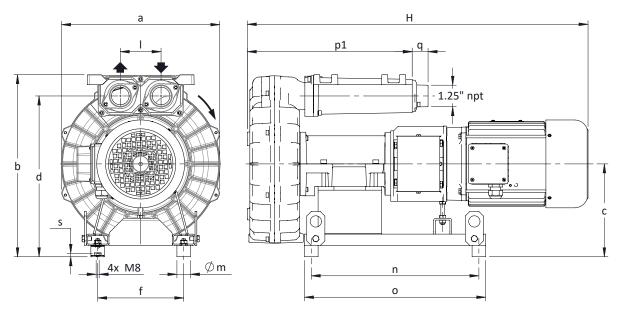
the suitability of the product for the application they are used in and the user assumes all risk and liability whatsoever in connection therewith.

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	70	5	230/460	11.6 / 5.8	200	1	81	257



Dimensions in Inches -

Model	HP	Size	а	b	С	d	f	Н	m	n	0	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	N 71	0.3
SCL R40-MD-GOR	5	184TC	15.74	ده.دا	0.07	סכ.כו	7.40	31.1	1.10	14.57	15.75	14.55	0.71	0.5

INSTALLATION

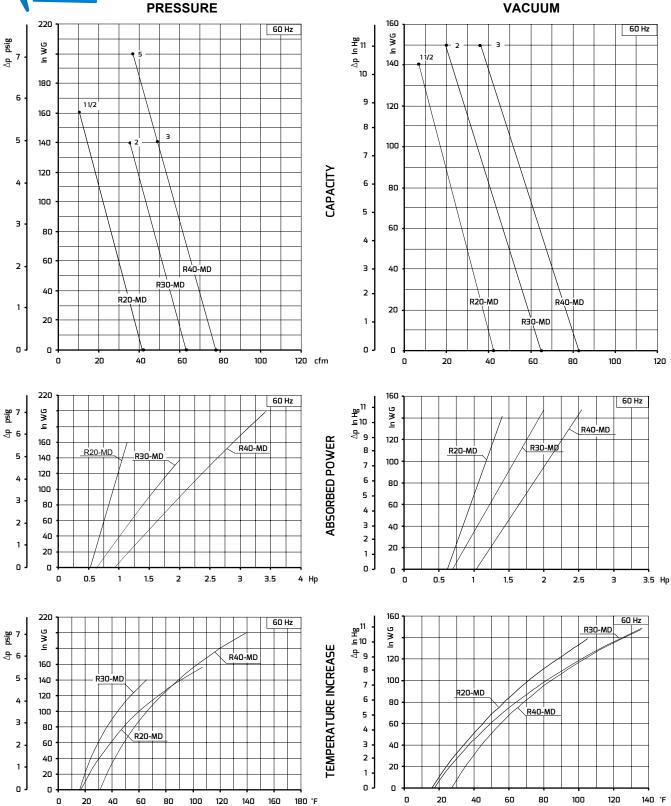
- For proper use, the blower should be equipped with Inlet FILTER and Safety Relief VALVE; other accessories available on request
- Ambient temperature from -15° to +40°C (+5° to +104° F).
- Specifications subject to change without notice.
- Before installation read carefully all instructions .

 $^{^{\}rm 1}$ Noise measured at 1 m distance with inlet and outlet ports piped, in accordance to ISO 3744.



R SERIES

XP VERSION



Curves refer to air at 68°F temperature and 29.92 In Hgatmospheric 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. HG	Noise ¹ (60 Hz) dB(A)	Weight Lbs.
SCL K07-MS-7.5-3 XP-1	294	7.5	208-230/460	18.9-17.8 / 8.9	116	8.8	79.3	238
SCL K07-MS-10-3 XP-1	234	10	208-230/460	24.3-22.4 / 11.2	160	-	79.6	262
SCL K08-MS-7.5-3 XP-1		7.5	208-230/460	18.9-17.8 / 8.9	68	5.0	80	243
SCL K08-MS-10-3 XP-1	381	10	208-230/460	24.3-22.4 / 11.2	105	8.5	80.3	267
SCL KO8-MS-GOR-15-3 XP-1		15	230/460	36 / 18	170	9.6	78	497
SCL K09-MS-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	60	4.4	80.5	289
SCL K09-MS-GOR-15-3 XP-1	471	15	230/460	36 / 18	130	9.6	81	503
SCL K09-MS-GOR-20-3 XP-1		20	230/460	48 / 24	160	ı	81	516
SCL K10-MS-10-3 XP-1		10	208-230/460	24.3-22.4 / 11.2	50	3.7	80.5	293
SCL K10-MS-GOR-15-3 XP-1	556	15	230/460	36 /18	110	8.1	81	517
SCL K10-MS-GOR-20-3 XP-1	550	20	230/460	48 / 24	160	9.6	81.4	527
SCL K10-MS-GOR-25-3 XP-1		25	230/460	58 / 29	200	-	81.6	708
SCL e11-MS-GOR-15-3 XP-1		15	230/460	36 / 18	80	5.9	82.4	617
SCL e11-MS-GOR-20-3 XP-1	639	20	230/460	48 / 24	120	9.6	82.7	655
SCL e11-MS-GOR-25-3 XP-1	ددن	25	230/460	58 / 29	150	10.3	85.6	913
SCL e11-MS-GOR-30-3 XP-1		30	230/460	70 / 35	200	1	86	944
SCL e12-MS-GOR-15-3 XP-1		15	230/460	36 / 18	50	3.0	82.9	551
SCL e12-MS-GOR-20-3 XP-1	722	20	230/460	48 / 24	85	6.2	83.2	564
SCL e12-MS-GOR-25-3 XP-1	122	25	230/460	58 / 29	120	8.9	83.2	915
SCL e12-MS-GOR-30-3 XP-1		30	230/460	70 / 35	150	10.3	83.2	946

INSTALLATION

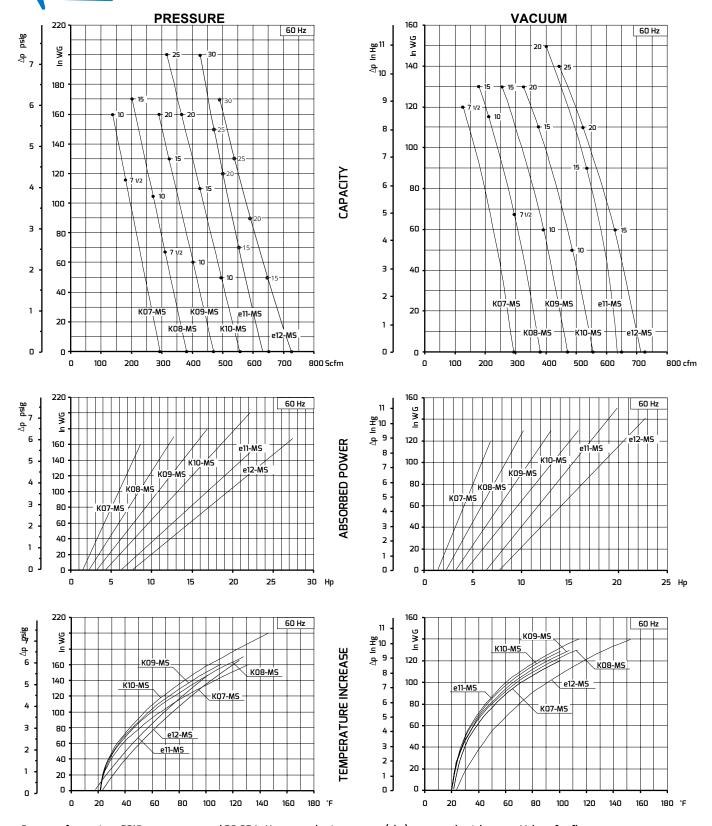
- For proper use, the blower should be equipped with Inlet FILTER and Safety Relief VALVE; other accessories available on request
- Ambient temperature from -15° to +40°C (+5° to +104° F).
- Specifications subject to change without notice.
- Before installation read carefully all instructions

 $^{^{\}rm 1}$ Noise measured at 1 m distance with inlet and outlet ports piped, in accordance to ISO 3744.



MS SERIES

XP VERSION



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 XP VERSION

MD Series

Model	Max. Flow (60 hz) cfm	Power (60 Hz) Hp	Voltage (60 Hz) V	Amperage (60 Hz) A	ΔP max (60 Hz) In. WG	ΔP max (60 Hz) In. Hg	Noise ¹ (60 Hz) dB(A)	Weight Lbs.
SCL K07R-MD-7.5-3 XP-1	128	7.5	208-230/460	18.9-17.8 / 8.9	240	11.9	75	232.6
SCL K08R-MD-7.5-3 XP-1	167	7.5	208-230/460	18.9-17.8 / 8.9	150	11.0	76.6	242.5
SCL KO8R-MD-10-3 XP-1	107	10	208-230/460	24.3-22.4 / 11.2	220	13.2	77	266.8
SCL K09-MD-7.5-3 XP-1	220	7.5	208-230/460	18.9-17.8 / 8.9	110	8.1	78	280.4
SCL K09-MD-10-3 XP-1	220	10	208-230/460	24.3-22.4 / 11.2	165	12.1	79.5	304.7
SCL K10-MD-10-3 XP-1	274	10	208-230/460	24.3-22.4 / 11.2	115	8.5	80.3	310.2
SCL e11-MD-GOR-15-3 XP-1	319	15	230/460	36 / 18	180	13.2	81.4	612
SCL e11-MD-GOR-20-3 XP-1	כוכ	20	230/460	48 / 24	260	-	81.7	651
SCL K12-MD-GOR-15-3 XP-1		15	230/460	36 / 18	100	7.4	82.3	556
SCL K12-MD-GOR-20-3 XP-1	335	20	230/460	48 / 24	180	13.2	82.6	569
SCL K12-MD-GOR-25-3 XP-1		25	230/460	48 / 24	240	-	82.9	750

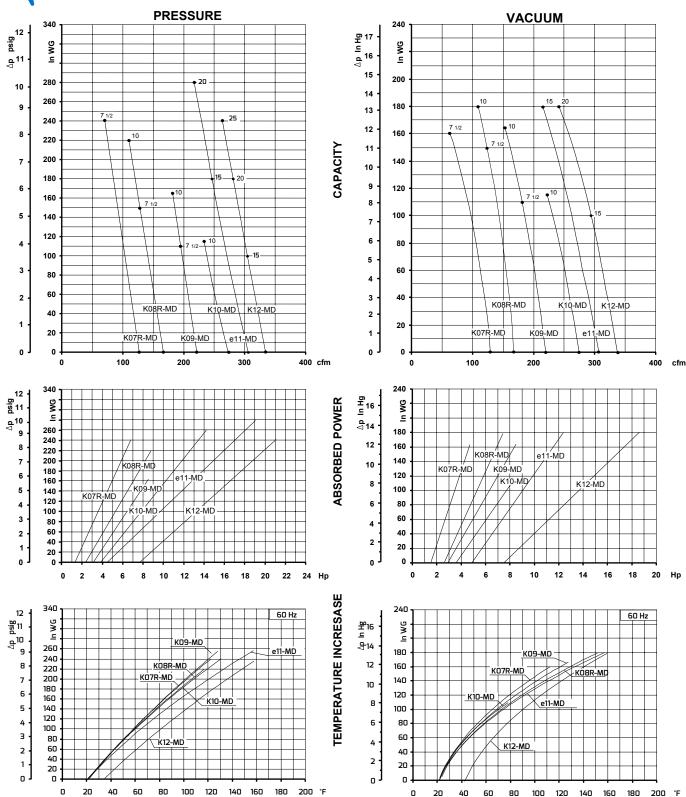
INSTALLATION

- 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



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.

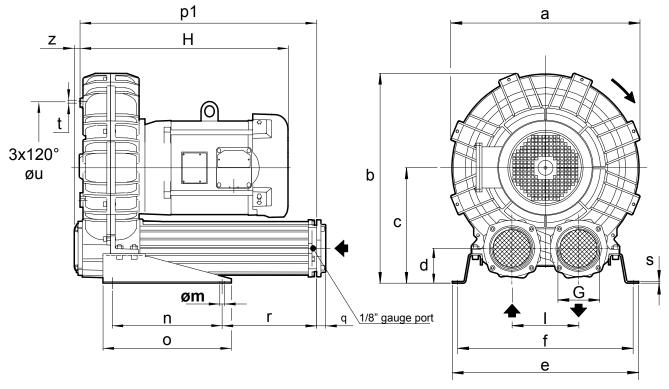
Data subject to change without notice.



MS / MD SERIES

XP VERSION

DIMENSIONS (7.5 & 10 HP)



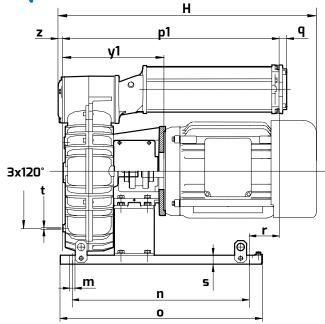
Dimensions in Inches - For reference only

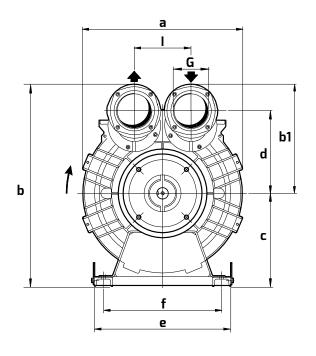
Model	HP	G	а	b	С	d	е	f	Н	i
SCL KO7-MS	7.5 & 10	3" NPT	16.69	18.94	10.59	3.23	18.43	17.24	22.52	6.10
SCL KO7R-MD	7.5 & 10	2" NPT	16.69	18.94	10.59	3.23	18.43	17.24	22.52	6.10
SCL KO8-MS	7.5 & 10	3" NPT	17.99	19.61	10.59	3.23	18.82	17.64	22.52	6.10
SCL KO8R-MD	7.5 & 10	2" NPT	17.99	19.61	10.59	3.23	18.82	17.64	22.52	6.10
SCL KO9-MS	7.5 & 10	4" NPT	19.37	22.09	12.40	3.78	20	18.82	27.93	7.17
SCL KO9-MD	10	4" NPT	19.37	22.09	12.40	3.78	20	18.82	22.9	7.17
SCL K10-MD	10	4" NPT	20.31	22.56	12.40	3.78	20	18.82	22.9	7.17
Model	m	n	0	p1	q	r	5	t	u	Z
SCL KO7-MS	0.51	11.81	13.78	20.16	0.98	5.39	0.20	M8	11.61	0.63
SCL KO7R-MD	0.51	11.81	13.78	16.46	0.71	1.69	0.20	M8	11.61	0.63
SCL KO8-MS	0.51	11.81	13.78	20.16	0.98	5.39	0.20	M8	12.20	0.63
SCL KO8R-MD	0.51	11.81	13.78	16.46	0.71	1.69	0.20	M8	12.20	0.63
SCL KO9-MS	0.51	11.81	13.78	23.07	0.98	7.83	0.20	M8	14.17	0.63
SCL KO9-MD	0.51	11.81	13.78	25.35	0.98	10.12	0.20	M8	14.17	0.63
SCL K10-MD	0.51	11.81	13.78	25.35	0.98	10.12	0.20	M8	14.17	0.63



MS / MD GOR SERIES XP VERSION

DIMENSIONS (15 - 40 HP)





Dimensions in Inches - For reference only

Model	HP	Size	G	а	b	С	d	е	f	Н	m
SCL KO8-MS-GOR	15	254-6TC	3"NPT	17.99	23.23	10.63	9.73	15.35	13.39	35.24	0.70
SCL KO9-MS-GOR	15 & 20	254-6TC	4" NPT	19.37	26.54	12.40	10.82	18.44	15.75	35.71	0.70
SCL K10-MS-GOR	15 & 20	254-6TC	4" NPT	20.31	26.54	12.40	10.82	18.11	15.75	35.71	0.70
JCL KID-WJ-dOK	25	284-6TSC	4" NPT	20.31	26.54	12.40	10.82	18.11	15.75	38.78	0.70
SCL e11-MS-GOR	15 & 20	254-6TC	4" NPT	22.30	27.20	12.30	11.70	18.11	15.75	38.60	0.70
JCE ETI-MIJ-GON	25 & 30	284-6TSC	4" NPT	22.30	27.20	12.30	11.70	18.11	15.75	38.60	0.70
SCL K11-MD-GOR	15 & 20	254-6TC	4" NPT	21.35	25.20	12.40	9.49	18.11	15.75	35.34	0.70
	15 & 20	254-6TC	4" NPT	21.35	24.40	12.40	11.67	18.11	15.75	36.49	0.70
SCL e12-MS-GOR	25 & 30	284-6TSC	4" NPT	22.30	27.20	12.30	11.70	18.11	15.75	40.13	0.70
	40	324TSC	4" NPT	22.30	27.20	12.30	11.70	18.11	15.75	42.08	0.70
SCL K12-MD-GOR	15 & 20	254-6TC	4" NPT	21.57	27.36	12.40	9.48	18.11	15.75	35.46	0.70
JCL KIZ-WID-GOK	25	284-6TSC	4" NPT	21.57	27.36	12.40	9.48	18.11	15.75	39.10	0.70

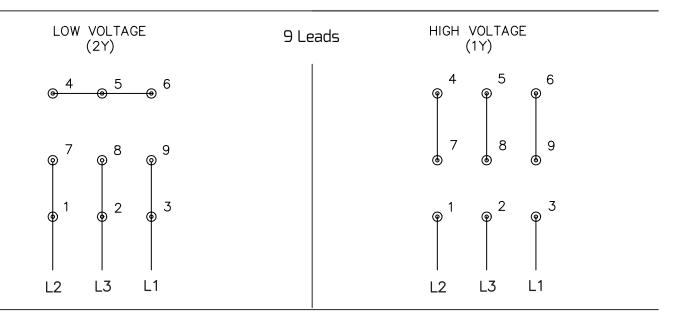
Model	HP	Size	n	0	p1	q	r	5	t	y1	Z
SCL KO8-MS-GOR	15	254-6TC	20.47	23.62	24.1	0.98	2.5	0.98	M8	13.35	0.63
SCL KO9-MS-GOR	15 & 20	254-6TC	23.62	26.77	27.60	0.98	2.95	1.18	M8	13.82	0.63
SCL K10-MS-GOR	15 & 20	254-6TC	23.62	26.77	27.60	0.98	2.95	1.18	M8	13.82	0.63
SCL KIU-WIS-GOR	25	284-6TSC	23.62	26.77	27.60	0.98	2.95	1.18	M8	13.25	0.63
SCL e11-MS-GOR	15 & 20	254-6TC	23.62	26.77	27.80	0.98	3.00	1.18	M8	14.60	0.87
JCE ETHNIJ-GON	25 & 30	284-6TSC	23.62	26.77	27.80	0.98	3.00	1.18	M8	14.60	0.87
SCL K11-MD-GOR	15 & 20	254-6TC	23.62	26.77	25.75	0.98	0.90	1.18	M8	13.45	0.63
	15 & 20	254-6TC	23.62	26.77	27.80	0.98	3.00	1.18	M8	14.60	0.87
SCL e12-MS-GOR	25 & 30	284-6TSC	23.62	26.77	27.80	0.98	3.00	1.18	M8	14.60	0.87
	40	324TSC	23.62	26.77	27.80	0.98	3.00	1.18	M8	14.60	0.87
SCL K12-MD-GOR	15 & 20	254-6TC	23.62	26.77	30.31	0.98	5.43	1.18	M8	13.57	0.63
JCL KIZ-MD-GOR	25	284-6TSC	23.62	26.77	30.31	0.98	5.43	1.18	M8	13.57	0.63



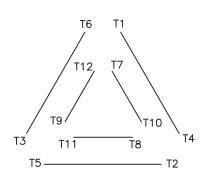
MS / MD GOR SERIES

XP VERSION Wiring

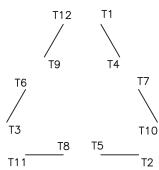
Motor Connection Diagrams



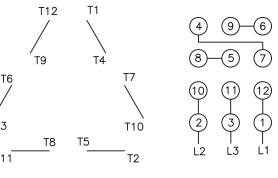
Low Voltage Delta

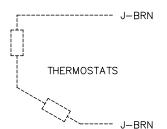


12 Leads



High Voltage Delta





Blower rotation is clockwise when viewed from electric motor cooling fan. Check rotation prior to making blower pipe connections. To change rotation, interchange any two line leads.

Specifications subject to change without notice. Alternate motors may be used - always use the wiring diagram that is supplied with the motor.



TECHNICAL Engineering Information

PSI	In. H20	In. Hg	mBar	mmH20
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. H₂O	x	0.03613	=	psi
In. H₂O	x	0.07355	=	In. Hg
mbar	X	0.4019	=	In. H ₂ O
psi	X	2.036	=	In. Hg

Flow							
m³/h	x	0.588	=	cfm			
lpm	X	0.03528	=	cfm			
cfm	x	1.699	=	m³/h			
cfm	X	28.32	=	lpm			

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

<u>Barometric pressure varies in direct proportion to altitude</u> Example #1 – If a blower is required to deliver 2 psig at 5000 feet, what pressure at standard air is required? Pressure = 29.92 / 24.89 x 2 = 2.4 psig

Example #2– If a blower is required to deliver 2 psig at standard air, what pressure will it deliver at 5000 feet? Pressure = 24.89 / 29.92 x 2 = 1.66 psig

Altitude Versus Barometric Pressure

Altitude	Pressure		Altitude	Pressure		Altitude	Pressure	
Feet	In Hg.	Psia	Feet	In. Hg.	Psia	Feet	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



