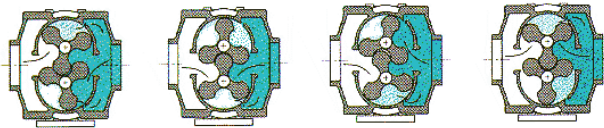


ACOUSTICAIR™ Low-Noise Rotary Positive Blowers

Models: 4109 - 4112

Operating Principle:

Position 1 Position 2 Position 3 Position 4



The operating principle provides major improvements over well proven, existing technology utilizing a wraparound expansion chamber prior to the discharge port. M-D utilizes three-lobe rotors which allow the pre-compression much sooner than a standard two-lobe design. The chamber created by the three-lobe rotor is smaller and has a longer compression time, significantly reducing the final compression. The pressure pulses are much less, reducing noise and vibration; therefore, improving bearing life. Shock waves are reduced or eliminated due to lower velocities and final differential pressures, further reducing noise. ACOUSTICAIR blowers also include an expansion chamber on the inlet side, reducing pulsing at the inlet port. The "S" port, plus design tuning, also contributes to reducing the overall noise level and the higher, and perceived "noisier" frequencies.

THE ACOUSTICAIR ADVANTAGES:

- * The **ACOUSTICAIR**, which utilizes tri-lobe rotors, special porting and tuning features is so revolutionary, it's patented.
- * M-D's tri-lobe rotor profile provides increased displacement and improved noise dampening over two-lobe involute profiles.
- * The unique shape of the **ACOUSTICAIR**'s special port fitting contributes significantly to its quieter operation.
- * Integral silencing chambers reduce pulsation, machine noise and vibration.
- * M-D 4100 **ACOUSTICAIR** models are interchangeable with equivalent M-D 4000 PD PLUS® models.
- * **ACOUSTICAIR** models are manufactured under M-D's ISO 9001 registered quality assurance program, the first American manufacturer of rotary blowers to gain this certification.
- * **ACOUSTICAIR** blowers are available through our worldwide sales and service network.

ACOUSTICAIR™ VS. PD PLUS®

RPM	DISCHARGE PRESSURE	MODEL 4112 ACOUSTICAIR	MODEL 4012 PD PLUS
1750	6 PSIG	85 dB(A)	91 dB(A)
1750	12 PSIG	86 dB(A)	92 dB(A)
1750	15 PSIG	90 dB(A)	98 dB(A)
2500	6 PSIG	86 dB(A)	91 dB(A)
2500	12 PSIG	91 dB(A)	97 dB(A)
2500	15 PSIG	93 dB(A)	98 dB(A)
3250	6 PSIG	86 dB(A)	95 dB(A)
3250	12 PSIG	90 dB(A)	98 dB(A)
3250	15 PSIG	94 dB(A)	100 dB(A)

Measured at one meter in test cell, fully piped, without silencers.

As indicated in the above test results, ACOUSTICAIR blowers significantly reduce operating noise levels. At a rotative speed of 3250 RPM and a discharge pressure of 12 PSIG, the reduction in noise energy was 8 dB(A), or over 80%.

Material Specifications:

Housing: Cast iron
 End Plates: Cast iron
 End Covers: Gear end - Cast iron Free end - Aluminum
 Rotors: Ductile iron
 Shafts: Ductile iron cast integrally with rotor
 Bearings: Gear end - Double row ball
 Free end and drive shaft - Single row ball
 Drive Shaft: SAE 4140 forged alloy steel
 Gears: Heat treated alloy steel, helical cut
 Seals: 17/46 series - Lip and labyrinth type on rotor shafts; lip seal on the drive shaft
 57/81 series - Mechanical and labyrinth type on rotor shafts; lip seal on the drive shaft
 64/67 series - Same as 57/81 series plus mechanical sealing on the drive shaft
 Lubrication: Oil splash system, both ends

For elevated pressure applications, 57/81 series and 64/67 series are available with high pressure sealing and testing to allow discharge pressures as high as 100 PSIG (15 PSI maximum pressure boost) *

* Blowers operating with a discharge pressure above 20 PSIG require mechanical rotor shaft sealing; above 25 PSIG requires hydrostatic testing and special high pressure seal leakage testing.

Optional Features:

Many optional features which are available on M-D model 4000 PD PLUS blowers are also available on model 4100 ACOUSTICAIR blowers such as:

- * Gastight features (single and double envelope)
- * Water Cooled End Plates (vertical flow models)
- * Gearhead Speed Increasing Drive
- * External Pressure Lubrication Systems

Refer to M-D 4000 PD PLUS specification sheet for details on these optional features.

LEADING THE SEARCH FOR NEW SOLUTIONS



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Performance Tables

In conjunction with our program of continuous testing and design upgrading, all specifications are subject to change without notice. All data are approximate. Request a quotation for your specific application.

Pressure (14.70 PSIA and 70°F Inlet)

MODEL SIZE	SPEED (RPM)	2 PSIG		5 PSIG		8 PSIG		10 PSIG		12 PSIG		15 PSIG		Max. Vacuum		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	"Hg	CFM	BHP
4109	1150	118	2.5	85	4.8	61	7.1							11	57	5.1
	1750	209	3.8	176	7.3	152	11	139	13	126	15			13	131	8.9
	2700	353	5.8	320	11	296	17	283	20	271	24	254	29	15	256	15
	3600	490	7.8	457	15	433	22	420	27	408	32	391	39	15	392	21
4112	1150	165	3.0	125	6.0	96	9.1							11	91	6.5
	1750	286	4.6	246	9.2	217	14	201	17	186	20			14	180	12
	2700	479	7.0	439	14	410	21	394	26	379	31	359	38	15	361	20
	3600	662	9.4	622	19	593	28	577	35	562	41	542	51	15	543	26

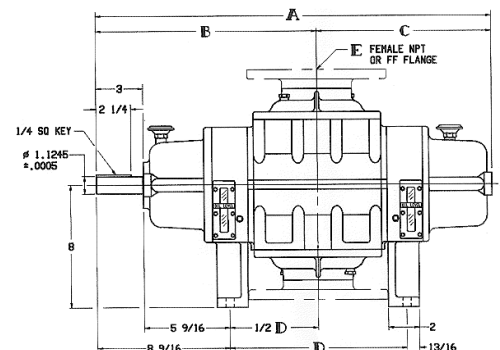
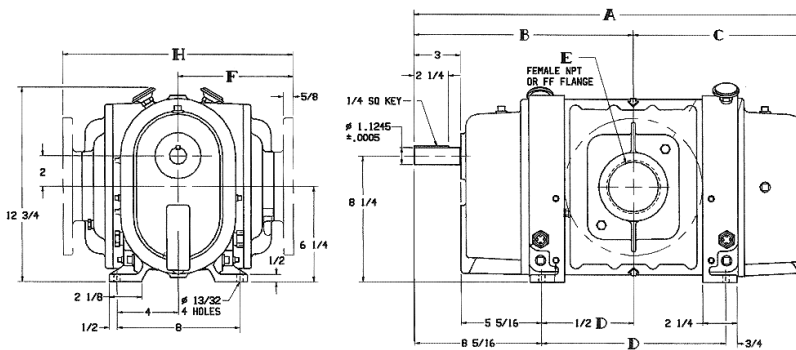
Shaded areas indicate areas where intermittent operation is recommended. Applications in shaded areas must be factory approved.

Dimensions

Certain dimensions for 64/67 double envelope gastight differ slightly from those shown below. Certified drawings are available through your local M-D representative.

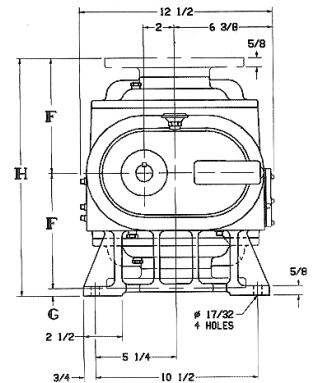
Series 17/57 (Horizontal Flow)

Series 46/81 (Vertical Flow)



MODEL	SERIES	A	B	C	D	E	F	G	H
4109	17				12.00	3" NPT	6.25	—	12.50
	46	25.63	14.31	11.31	11.50	3" NPT	6.25	1.75	14.25
	57				12.00	4" FLG	7.50	—	15.00
	81				11.50	4" FLG	7.50	0.50	15.50
4112	17				15.00	4" NPT	6.25	—	12.50
	46	28.63	15.81	12.81	14.50	4" NPT	6.25	1.75	14.25
	57				15.00	4" FLG	6.25	—	15.00
	81				14.50	4" FLG	7.50	0.50	15.50

Values are approximate and should not be used for construction. Certified drawings are available through your local M-D representative.



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