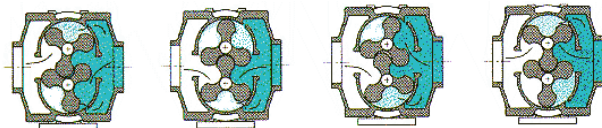


ACOUSTICAIR™ Low Noise Rotary Positive Blowers

MODELS: 4706 - 4709 - 4712

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. This also contributes to a lower overall noise level. Both chambers greatly reduce attenuation requirements on silencers.

THE ACOUSTICAIR ADVANTAGES:

- * M-D's tri-lobe rotor profile provides increased displacement and improved noise dampening over two-lobe involute profiles.
- * **ACOUSTICAIR** blowers include helical gears doweled to hubs which are keyed to the rotor shafts, not taper fit spur gears which lose timing more easily.
- * Integral silencing chambers on both inlet and discharge reduce pulsation, machine noise and vibration.
- * M-D 4700 **ACOUSTICAIR** models are interchangeable with equivalent Roots RCS-J series blowers.
- * **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. EQUALIZER®

RPM	DISCHARGE PRESSURE	MODEL 4709 ACOUSTICAIR	MODEL 4609 EQUALIZER
1800	5 PSIG	85 dB(A)	93 dB(A)
1800	10 PSIG	86 dB(A)	100 dB(A)
1800	13 PSIG	87 dB(A)	101 dB(A)
2400	5 PSIG	90 dB(A)	96 dB(A)
2400	10 PSIG	88 dB(A)	104 dB(A)
2400	13 PSIG	88 dB(A)	108 dB(A)
3000	5 PSIG	97 dB(A)	100 dB(A)
3000	10 PSIG	97 dB(A)	106 dB(A)
3000	15 PSIG	98 dB(A)	107 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 2400 RPM and a discharge pressure of 13 PSIG, the reduction in noise energy was 20 dB(A), or over 90%.

Material Specifications:

- Housing: Cast iron
- End Plates: Cast iron
- End Covers: Cast iron
- Rotors: Ductile iron
- Shafts: Ductile iron cast integrally with rotor
- Bearings: Gear end - Double row ball
Drive end - Cylindrical roller
- Drive Shaft: Ductile iron, cast integrally with drive rotor
- Gears: Heat treated alloy steel, helical cut
- Seals: Lip and piston ring labyrinth type on rotor shafts;
lip seal on the drive shaft
- Lubrication: Oil splash system, both ends

Additional Features:

ACOUSTICAIR blowers include many other features which set them apart from competitive makes such as:

- * Integral silencing chambers on both inlet and discharge
- * Areas of shaft surfaces in contact with sealing elements are polished to reduce seal wear and risk of leakage.
- * Quieter helical timing gears are keyed to rotor shafts to prevent rotor clash and loss of timing.
- * Flow configuration is convertible from horizontal to vertical flow without replacement of end plates.

Gastight and Elevated Pressure Designs:

Refer to M-D 4100 and 5600 ACOUSTICAIR™, and M-D 4000 and 5500 PD PLUS® specification sheets for additional information on these optional features.

LEADING THE SEARCH FOR NEW SOLUTIONS



**TUTHILL
CORPORATION**

**M-D Pneumatics
Division**

4840 West Kearney Street, P.O. Box 2877
Springfield, Missouri USA 65801-2877
Tel 417 865-8715 800 825-6937 Fax 417 865-2950



www.mdpneumatics.com

Performance Tables

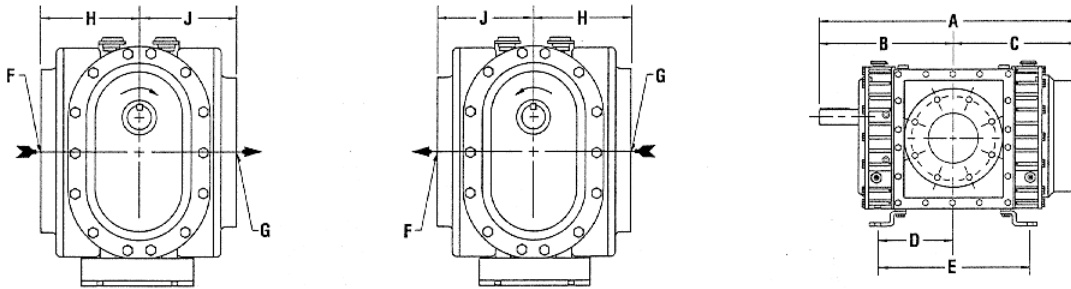
In conjunction with our program of continuous testing and design upgrading, all specifications are subject to change without notice. All data are approximate. Request a quotation for your specific application.

Pressure (14.70 PSIA and 70° F Inlet)

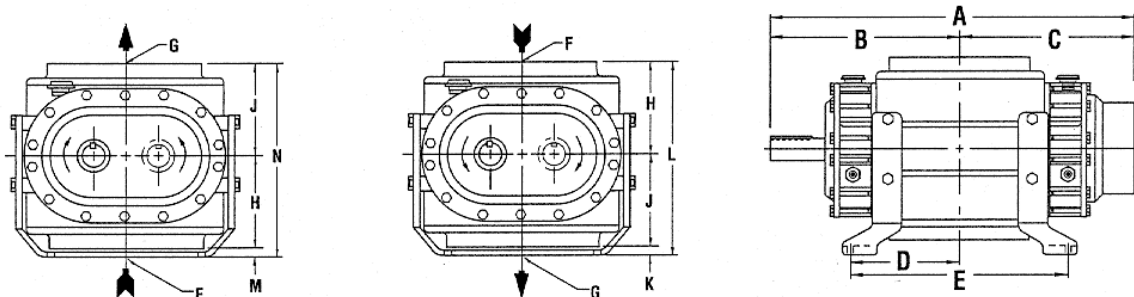
BLOWER MODEL	SPEED (RPM)	2 PSIG		5 PSIG		8 PSIG		10 PSIG		12 PSIG		15 PSIG		Max. Vacuum		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	" Hg	CFM	BHP
4706	1150	141	2.8	109	5.4	85	8.0	—	—	163	17	—	—	12	73	6.2
	1750	244	4.3	211	8.2	188	12	175	15	263	24	243	30	12	176	9.4
	3000	457	7.4	425	14	402	21	389	25	377	30	361	36	15	362	19
	4000	628	9.9	596	19	573	28	560	34	548	40	532	49	15	533	26
4709	1150	216	3.6	175	7.4	145	11	129	14	—	—	—	—	12	130	8.5
	1750	365	5.5	324	11	295	17	278	21	263	24	243	30	15	245	16
	3000	677	9.4	636	19	606	29	590	35	574	42	543	52	15	556	27
	4000	926	13	885	26	855	39	639	47	823	56	803	69	15	805	36
4712	1150	294	4.4	245	9.3	210	14	191	18	180	21	—	—	12	192	11
	1750	490	6.7	442	14	407	22	387	27	369	32	345	39	15	347	20
	3000	900	11	852	24	817	37	797	46	779	54	755	67	15	757	35
	4000	1228	15	1180	32	1145	50	1125	61	1107	73	1083	90	15	1085	46

Dimensions

Series 17 (Horizontal Flow)



Series 46 (Vertical Flow)



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	NET WT. (LBS)
4706	20.00	10.44	9.56	4.75	9.50	4" NPT	4" NPT	7.25	7.25	.25	14.75	.25	14.75	290
4709	23.00	11.94	11.06	6.25	12.50	5" NPT	5" NPT	7.25	7.25	.25	14.75	.25	14.75	330
4712	26.00	13.44	12.56	7.75	15.50	6" FLG	5" NPT	6.00	7.00	.50	13.50	1.50	14.50	370

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

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