

**Gardner
Denver**

POSITIVE DISPLACEMENT BLOWERS & VACUUM PUMPS

DuroFlow[®]
Industrial Series



It's all about....

the DuroFlow

The DuroFlow Series combines a proven bi-lobe design with on-the-job experience to deliver reliable, clean, oil-free air to a wide range of industrial applications. This long-trusted series of blowers is available in a wide variety of sizes and configurations, all supported by a worldwide network of trained professionals and a manufacturer's warranty.

THE DUROFLOW PRODUCT LINE DELIVERS

- Pressure to 15 psig
- Vacuum to 16 inHg
- Airflow to 4,300 cfm



30 Series
3004, 3006



45 Series
**4504, 4506, 4509
4512, 4518**

Results

Durable

Reliable

Proven

TRUST

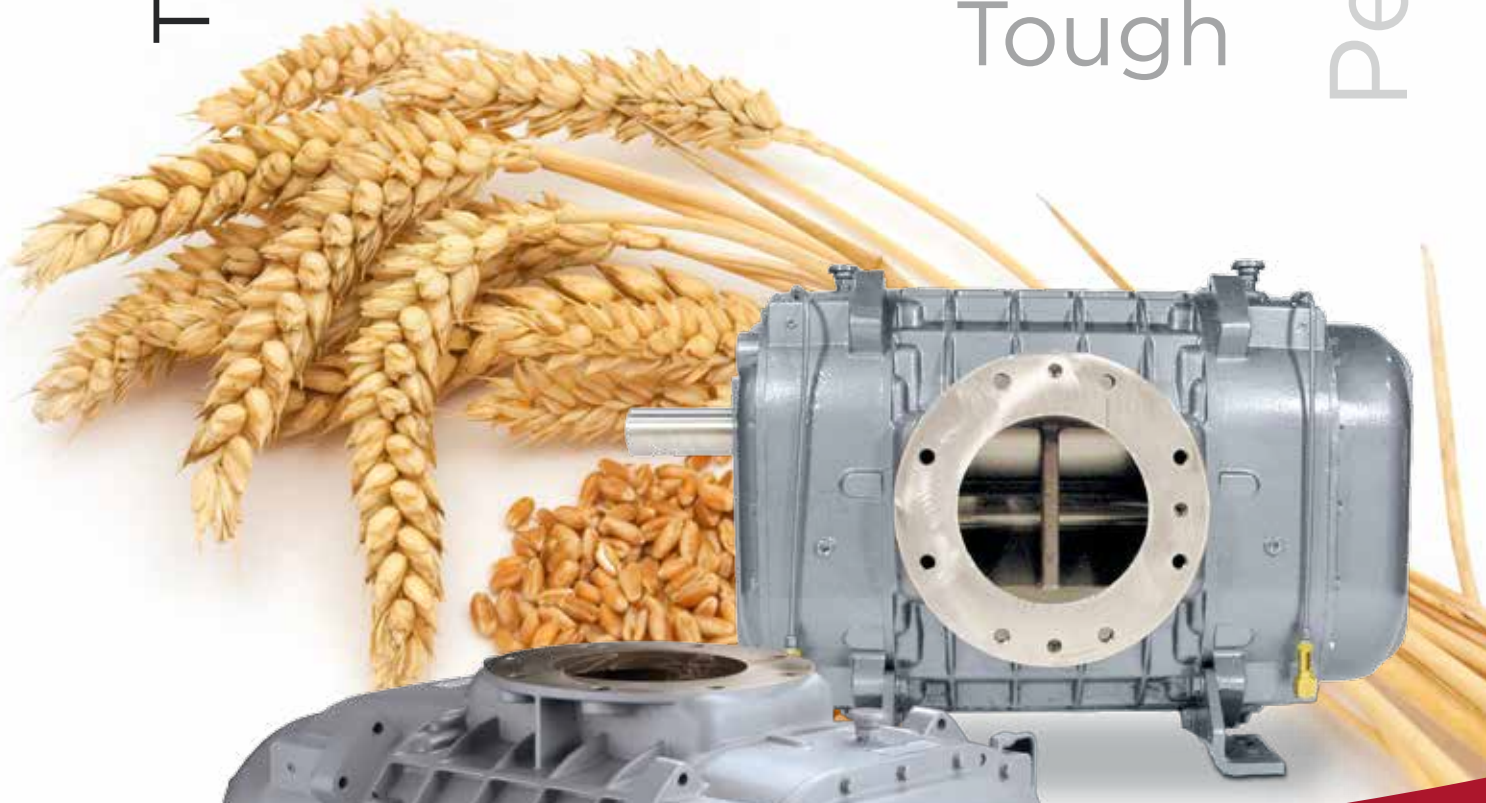
Tradition

Strength

Quality

Tough

Performance



70 Series
 7009, 7012, 7015,
 7018, 7023, 7028

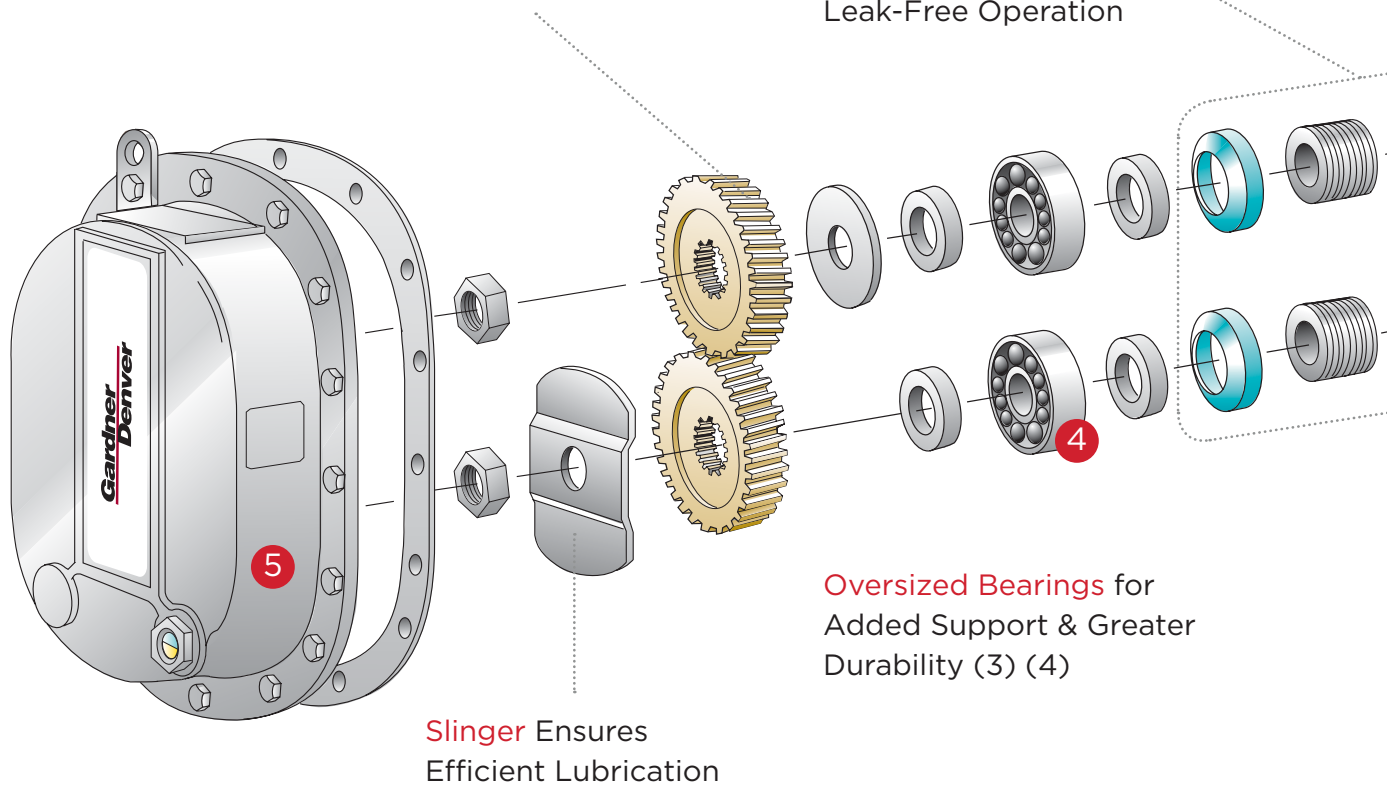
It's all about...

the Durable Design

Dual Splash Lubrication
for Longer Product Life (5)

Shaft Splines Assure
Non-Slip Rotor Timing (6)

Advanced
Oil & Air Seals Provide
Leak-Free Operation



Oversized Bearings for
Added Support & Greater
Durability (3) (4)

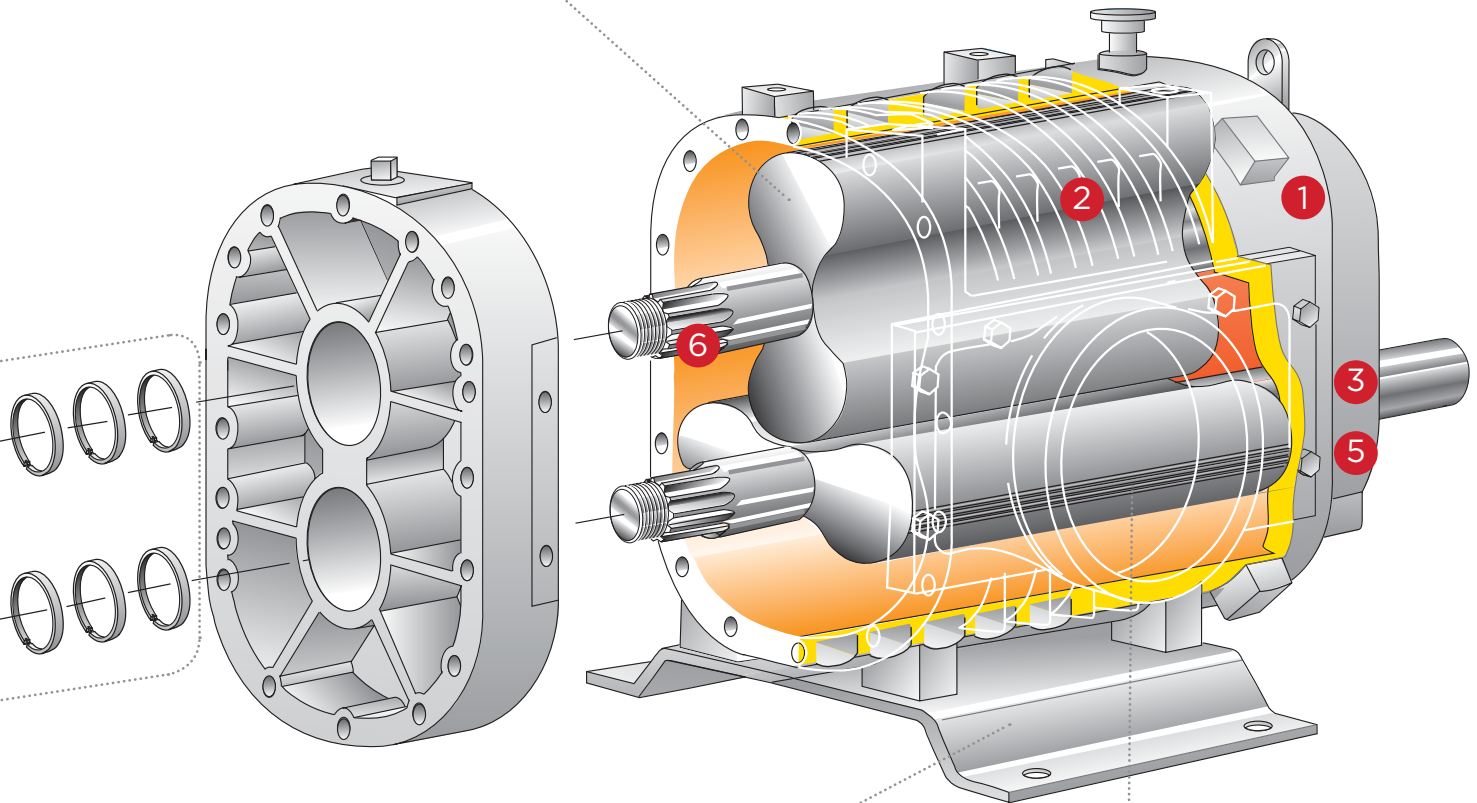
Slinger Ensures
Efficient Lubrication

Technology	Specifications		
Bi-Lobe	UP TO		
	4,300	CFM	
	15	PSI	
	16	inHg	

High-Strength, Ductile Iron Cast **Solid Rotors** Eliminate Potential for Vibration

Single Piece Cylinder Prevents Distortion (1)

Integral Ribs for Cooler Operating Temperatures & Improved Performance (2)



Vertical or Horizontal **Mounting Configuration**

Serrated Tips Reduce Power Consumption



45 Series Design Advantages

It's all about...

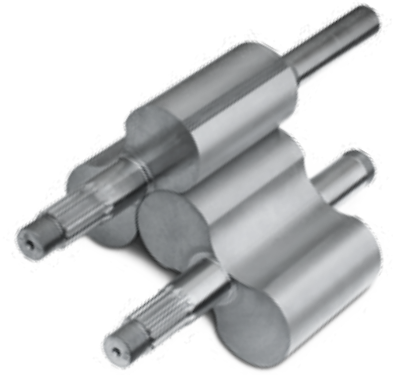
a History of Toughness



Designed for
dusty, abrasive
environments

Solid, Bi-Lobe Rotor Design

- Available on 30 and 45 Series
- Eliminates potential for vibration caused when hollow rotors become unbalanced due to build-up of ingested material inside the rotor cavities.



Durable Single-Piece Cast Iron Cylinder with Integral Ribs

- Provides greater strength and rigidity
- Improves heat dissipation
- Prevents distortion that can affect internal clearances and reduce performance



Innovative Rotor/Shaft Design

- Machined from a single, high strength ductile iron casting
- Dynamically balanced assures extra strength and rigidity to handle maximum loads on a continuous basis without fatigue, deflection or vibration



Helical Timing Gears Mounted on Precision Machined Shaft Splines

- Assures secure non-slip rotor timing even under surge conditions or high torque start-up



Oversized Bearings

- Adds support and greater durability
- Prevents destructive axial rotor movement commonly caused by misaligned V-belt drives
- Gear-end roller bearings support rotor shafts
- Drive-end double-row angular contact ball bearings fix the rotor position



It's all about...

the Advantages

PRODUCT DESIGN	DUROFLOW 45 SERIES	COMPETITOR A	COMPETITOR B	DUROFLOW ADVANTAGES
MODELS	5 Sizes	4 Sizes	4 Sizes	Greater Flow Capacity
CYLINDER DESIGN ¹	One piece cylinder	Two piece cylinder	One piece cylinder	<ul style="list-style-type: none"> More rigid and durable Noise & pulsation dampening Ensures better tip clearance accuracy Easier assembly / disassembly
CYLINDER RIB DESIGN ^{1,2}	Integral cylinder ribs	Minimal cylinder ribs	Minimal cylinder ribs	<ul style="list-style-type: none"> Improves heat dissipation Reduces torsion on cylinder
DRIVE END BEARINGS ¹	Oversized double row ball angular contact (drive & non-drive shafts)	Single row ball (non-drive shaft)	Cylindrical roller	<ul style="list-style-type: none"> Increases bearing life Better equipped to handle radial & axial loads commonly caused by misaligned V-belt drives
DUAL SPLASH LUBRICATION ¹	Common oil sump	Separate oil reservoirs	Separate oil reservoirs	<ul style="list-style-type: none"> Simpler maintenance
GEAR END BEARINGS	Roller bearing	Single row ball	Double row ball	<ul style="list-style-type: none"> Increases bearing life
GEAR TYPE ¹	Helical	Straight spur	Helical	<ul style="list-style-type: none"> Quiet & smooth mechanical operation Reduces backlash
GEAR ATTACHMENTS ¹	Spline gear fit	Taper gear fit	Keyed interference fit	<ul style="list-style-type: none"> Eliminates timing loss and improves reliability

PRODUCT DESIGN	DUROFLOW 45 SERIES	COMPETITOR A	COMPETITOR B	DUROFLOW ADVANTAGES
IMPELLER TIPS	Serrated	Radius	Radius	<ul style="list-style-type: none"> Improves performance Reduces power consumption Cooler operating temperatures
MAIN AIR SEAL	Piston ring	Piston ring	Piston ring	<ul style="list-style-type: none"> Longer seal life Less wear
MAIN OIL SEAL	Two piston ring seals with slinger and groove	Lip seal	Lip seal	<ul style="list-style-type: none"> Superior oil sealing
SHAFT SEAL ¹ & SEAL SURFACE	Viton lip seal with o-rings wear sleeve	Viton lip seal on shaft	Lip seal on shaft	<ul style="list-style-type: none"> Improves sealing method Extended shaft life

1 Also standard features on the 30 and 70 Series
2 Model sizes 4509, 4512 & 4518



It's all about...

the Applications



APPLICATIONS TO MEET YOUR INDUSTRY NEEDS

Ideal Applications:

- Aquaculture - Aeration
- Cement & Lime - Fluidization & Conveying
- Chemical - Vacuum Processing & Conveying
- Dairy - Automated Milking
- Dry Bulk Hauling - Trailer Unloading & Aeration
- Environmental Services - Sewer Cleaning & Portable Restroom Services
- Industrial - Material Vacuuming
- Milling & Baking - Blending & Conveying
- Power Generation - Fly Ash Conveying & Aeration
- Pulp & Paper - Chip Conveying & Process Vacuum
- Resin & Plastic - Processing & Conveying
- Vacuum Excavation - Potholing & Slurry Recovery
- Wastewater - Aeration & Backwashing

This list illustrates industries which depend upon the DuroFlow Industrial Series to deliver clean, oil-free air to a wide range of global applications.



Flex-Mount™ Design Provides Maximum Installation Versatility

- Flex-Mount™ Design and available porting connectors provide installation flexibility
- Assures interchangeability of existing installed DuroFlow models or compatibility as replacement for most competitive models
- Reduces inventory requirements due to machine flexibility



30 Series Performance Data

PRESSURE

MODEL	RPM	4 PSI		6 PSI		8 PSI		10 PSI		12 PSI		15 PSI	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3004	2,950	94	2.5	85	3.7	78	4.8	72	6.0	66	7.1	85	10.8
	3,550	121	3.1	112	4.5	105	5.9	99	7.3	93	8.7	105	12.3
	4,000	141	3.6	133	5.2	125	6.8	119	8.3	113	9.9	105	12.3
3006	2,950	146	3.7	133	5.4	123	7.2	114	8.9	105	10.7	135	16.1
	3,550	186	4.6	174	6.7	164	8.8	154	10.9	146	13.0	165	18.3
	4,000	217	5.2	205	7.6	194	10.0	185	12.4	177	14.7	165	18.3

VACUUM

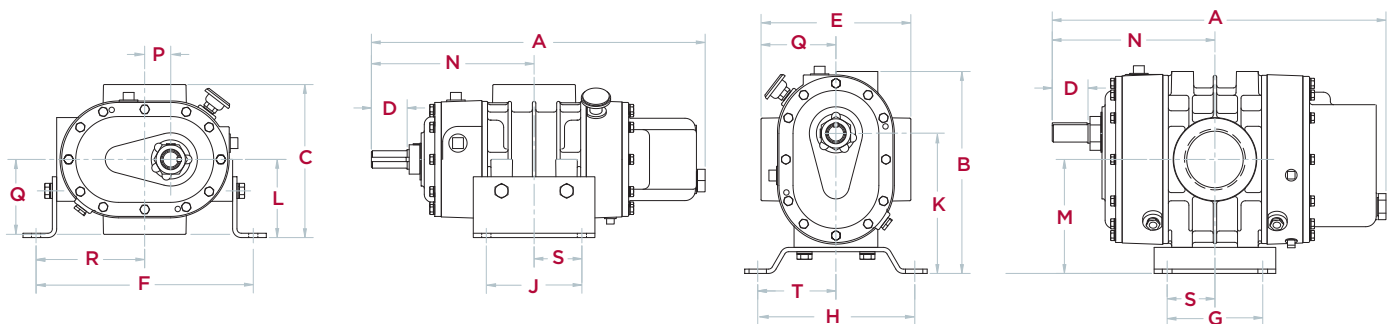
MODEL	RPM	4 inHG		6 inHG		8 inHG		10 inHG		12 inHG		14 inHG		15 inHG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
3004	2,950	104	1.3	96	1.9	88	2.5	80	3.0	72	3.6	90	5.1	106	6.3
	3,550	131	1.7	123	2.4	115	3.1	107	3.8	99	4.5	110	5.9	106	6.3
	4,000	151	2.0	143	2.8	135	3.6	127	4.4	119	5.1	110	5.9	106	6.3
3006	2,950	159	1.9	148	2.8	137	3.6	126	4.5	114	5.4	102	6.2	136	8.1
	3,550	200	2.4	189	3.5	178	4.5	167	5.5	155	6.6	142	7.6	166	9.2
	4,000	231	2.8	219	4.0	208	5.2	197	6.3	186	7.5	173	8.7	166	9.2

Performance based on inlet air at standard temperature of 68° F, an ambient pressure of 14.7 psia and 36% relative humidity. For performance at non-standard conditions, contact your authorized Gardner Denver representative.

30 Series Dimensional Data

MODEL	WEIGHT	PORT SIZE CONN.	SHAFT DIAM.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
3004	90	2.5" NPT	1.00	17.20	11.62	8.91	2.06	8.82	12.50	4.00	9.00	4.00	8.06	4.50	6.56	8.36	1.50	4.41	6.25	2.00	4.50
3006	110	3" NPT	1.00	19.20	11.62	8.81	2.06	8.82	12.50	5.50	9.00	5.50	8.06	4.50	6.56	9.36	1.50	4.31	6.25	2.75	4.50

Weights are in pounds and include shipping cartons or pallets. All dimensions shown in inches. 30 Series Mounting Bolt Hole Diameter = .56 inches.



45 Series Performance Data

PRESSURE

MODEL	RPM	4 PSI		6 PSI		8 PSI		10 PSI		12 PSI		15 PSI	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4504	1,750	137	3.7	123	5.4	112	7.2	102	8.9	93	10.6	216	23.1
	2,950	271	7.3	258	10.2	247	13.0	237	15.9	228	18.8	333	33.1
	4,000	389	11.6	375	15.5	364	19.4	354	23.3	345	27.2		
4506	1,750	214	5.5	196	8.1	181	10.6	167	13.2	155	15.8	340	34.3
	2,950	415	10.5	397	14.8	382	19.1	369	23.5	357	27.8	517	48.5
	4,000	592	16.3	574	22.2	559	28.0	545	33.9	533	39.8		
4509	1,750	324	8.4	297	12.2	275	16.1	255	19.9	238	23.8	516	51.9
	2,950	626	16.3	600	22.7	577	29.2	558	35.7	540	42.2	781	74.1
	4,000	891	25.8	864	34.6	842	43.4	822	52.1	805	60.9		
4512	1,750	454	11.0	424	16.2	399	21.3	377	26.4	357	31.5	329	39.2
	2,950	858	21.0	828	29.6	802	38.3	780	46.9	760	55.5	732	68.5
	4,000	1,210	32.6	1,180	44.4	1,155	56.1	1,133	67.8	1,113	79.5	1,085	97.1
4518	1,750	696	16.3	654	24.0	618	31.7	587	39.3				
	2,950	1,300	30.2	1,259	43.1	1,223	56.1	1,192	69.1				
	4,000	1,830	45.8	1,788	63.3	1,752	80.9	1,721	98.5				

VACUUM

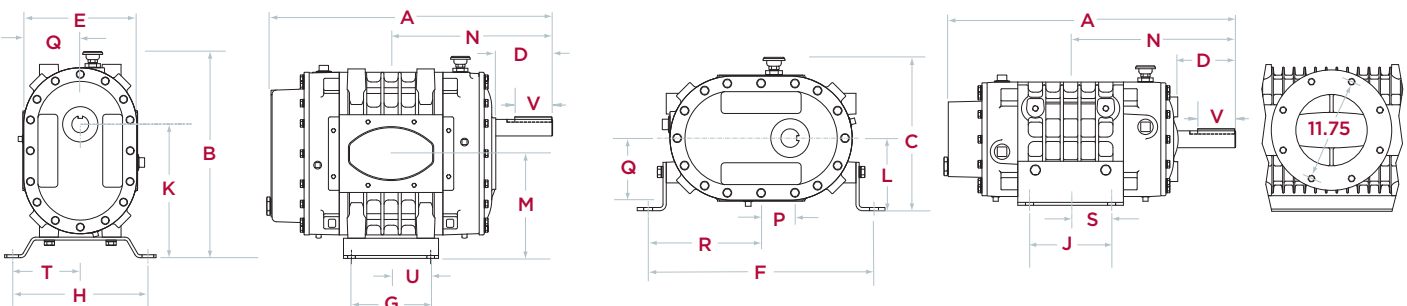
MODEL	RPM	4 inHG		6 inHG		8 inHG		10 inHG		12 inHG		14 inHG		16 inHG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
4504	1,750	151	2.0	139	2.8	127	3.6	115	4.4	103	5.2	224	10.7	326	17.1
	2,950	286	4.2	273	5.5	262	6.8	250	8.1	237	9.4	341	15.5		
	4,000	403	7.1	391	8.8	379	10.5	367	12.1	355	13.8				
4506	1,750	233	2.9	217	4.1	201	5.3	185	6.6	168	7.8	351	15.8	330	17.8
	2,950	435	5.8	418	7.8	402	9.8	386	11.8	369	13.8	527	22.6	507	25.2
	4,000	611	9.7	595	12.3	579	14.9	563	17.5	546	20.0				
4509	1,750	352	4.4	328	6.2	305	8.1	281	9.9	257	11.7	532	24.0	502	27.0
	2,950	655	9.2	631	12.2	607	15.1	584	18.1	559	21.1	797	34.6	766	38.4
	4,000	919	15.7	895	19.5	872	23.3	848	27.0	824	30.8				
4512	1,750	487	5.7	459	8.2	433	10.6	406	13.1	378	15.6	347	18.0	716	35.7
	2,950	890	11.7	863	15.7	836	19.7	809	23.7	781	27.7	750	31.7	1,069	50.3
	4,000	1,243	19.5	1,215	24.6	1,189	29.8	1,162	34.9	1,134	40.0	1,103	45.2		
4518	1,750	741	8.3	703	12.0	666	15.8	628	19.5	589	23.2	546	26.9	1,103	52.9
	2,950	1,346	16.4	1,308	22.5	1,271	28.6	1,233	34.7	1,194	40.8	1,151	46.8	1,632	74.0
	4,000	1,875	26.5	1,837	34.4	1,800	42.3	1,762	50.2	1,723	58.2	1,680	66.1		

Performance based on inlet air at standard temperature of 68° F, an ambient pressure of 14.7 psia and 36% relative humidity. For performance at non-standard conditions, contact your authorized Gardner Denver representative.

45 Series Dimensional Data

MODEL	WEIGHT	PORT SIZE CONN.	SHAFT DIAM.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
4504	190	4" NPT	1.44	18.01	17.54	11.88	3.43	9.75	17.50	4.87	11.50	5.00	11.35	5.62	9.10	10.05	2.25	4.87	8.75	3.50	5.75	2.44	3.00
4506	220	4" NPT	1.44	21.51	17.54	11.88	4.93	9.75	17.50	6.87	11.50	7.00	11.35	5.62	9.10	12.55	2.25	4.87	8.75	3.50	5.75	3.44	3.50
4509	260	4" or 5" NPT	1.44	24.45	17.54	11.88	4.93	9.75	17.50	6.87	11.50	7.00	11.35	5.62	9.10	14.03	2.25	4.87	8.75	3.50	5.75	3.44	3.50
4512	300	6" NPT	1.44	27.51	17.54	11.88	4.93	9.75	17.50	9.87	11.50	10.00	11.35	5.62	9.10	15.55	2.25	4.87	8.75	5.00	5.75	4.94	3.50
4518	460	8" Flange	1.44	33.51	17.54	11.88	4.93	13.00	17.50	15.87	11.50	16.00	11.35	5.62	9.10	18.53	2.25	6.50	8.75	8.00	5.75	7.94	3.50

Weights are in pounds and include shipping cartons or pallets. All dimensions shown in inches. 45 Series Mounting Bolt Hole Diameter = .69 inches. 4518 dimensional variations available upon request.



70 Series Performance Data

PRESSURE

MODEL	RPM	4 PSI		6 PSI		8 PSI		10 PSI		12 PSI		15 PSI	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
7009	1,500	622	15.8	563	23.5	513	31.2	469	38.9	429	46.7	552	70.1
	1,800	799	19.1	740	28.4	690	37.7	646	46.9	606	56.2	1,054	104.3
	2,650	1,300	29.3	1,241	42.9	1,191	56.5	1,147	70.2	1,108	83.8		
7012	1,500	853	21.0	779	31.4	716	41.7	660	52.0	610	62.4	779	93.6
	1,800	1,090	25.4	1,016	37.8	953	50.2	897	62.6	847	75.0	1,451	138.9
	2,650	1,762	38.5	1,687	56.8	1,624	75.0	1,569	93.3	1,519	111.5		
7015	1,500	1,088	26.0	1,002	38.8	929	51.6	866	64.5	808	77.3	1,024	116.0
	1,800	1,382	31.4	1,296	46.8	1,223	62.2	1,160	77.5	1,102	92.9	1,857	171.8
	2,650	2,215	47.3	2,129	69.9	2,056	92.6	1,993	115.2	1,935	137.9		
7018	1,500	1,322	31.2	1,221	46.7	1,136	62.1	1,061	77.5	993	93.0		
	1,800	1,676	37.7	1,575	56.2	1,490	74.7	1,415	93.2	1,308	111.8	1,211	139.5
	2,650	2,679	56.5	2,578	83.8	2,493	111.1	2,418	138.3	2,310	165.6	2,214	206.5
7023	1,500	1,709	41.9	1,578	61.6	1,479	81.4	1,386	101.1	1,303	120.9		
	1,800	2,162	51.5	2,037	75.2	1,932	98.9	1,839	122.6	1,756	146.3		
	2,650	3,370	80.8	3,245	115.0	3,140	149.2	3,047	183.5	2,964	217.7		
7028	1,500	2,094	51.4	1,944	75.4	1,818	99.5	1,707	123.6				
	1,800	2,646	63.4	2,496	92.2	2,370	121.1	2,259	150.0				
	2,600	4,118	100.3	3,968	142.0	3,842	183.8	3,731	225.5				

VACUUM

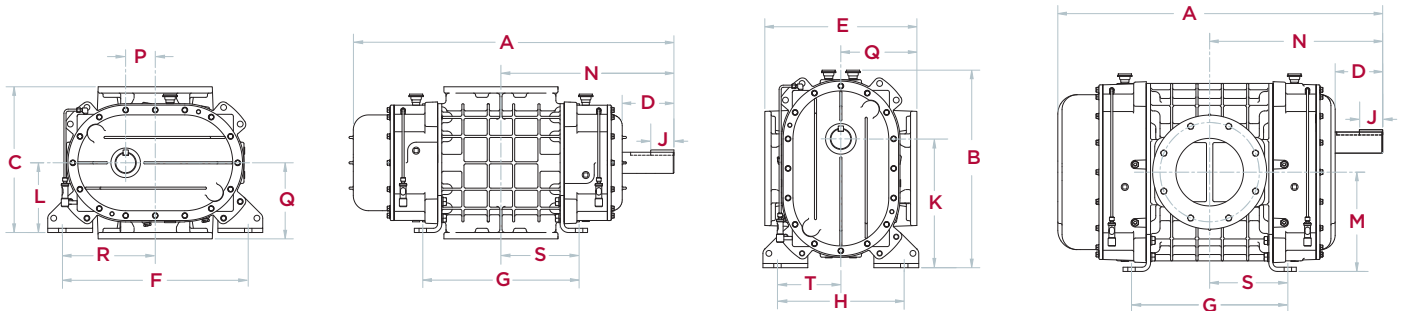
MODEL	RPM	4 inHG		6 inHG		8 inHG		10 inHG		12 inHG		14 inHG		16 inHG	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
7009	1,500	687	7.9	632	11.7	580	15.5	528	19.3	472	23.1	412	26.9		
	1,800	864	9.7	809	14.3	757	18.8	705	23.4	649	27.9	589	32.5	1,023	55.6
	2,650	1,365	15.4	1,311	22.1	1,259	28.8	1,206	35.5	1,151	42.2	1,090	48.9		
7012	1,500	935	10.5	866	15.6	801	20.7	734	25.7	665	30.8	589	35.9		
	1,800	1,172	12.8	1,103	18.9	1,038	25.0	971	31.1	902	37.2	826	43.3	1,412	73.7
	2,650	1,844	19.9	1,775	28.9	1,709	37.9	1,634	46.8	1,573	55.8	1,497	64.8		
7015	1,500	1,182	13.0	1,103	19.3	1,027	25.5	951	31.8	870	38.1	783	44.4		
	1,800	1,476	15.7	1,397	23.3	1,321	30.8	1,245	38.4	1,164	46.0	1,077	53.5	1,812	91.0
	2,650	2,309	24.2	2,230	35.4	2,154	46.5	2,078	57.6	1,997	68.7	1,910	79.9		
7018	1,500	1,432	15.5	1,340	23.1	1,251	30.7	1,161	38.3	1,067	45.9	964	53.4		
	1,800	1,786	18.8	1,694	27.9	1,605	37.0	1,515	46.1	1,421	55.2	1,318	64.3	2,205	109.2
	2,650	2,789	28.8	2,697	42.2	2,608	55.6	2,518	69.0	2,424	82.4	2,321	95.8		
7023	1,500	1,847	21.8	1,732	31.5	1,622	41.2	1,510	50.9	1,393	60.6	1,266	70.3		
	1,800	2,300	27.4	2,185	39.0	2,075	50.6	1,963	62.3	1,846	73.9	1,719	85.6	2,784	146.8
	2,600	3,508	45.9	3,393	62.7	3,283	79.6	3,171	96.4	3,054	113.2	2,927	130.0		
7028	1,500	2,258	26.9	2,121	38.7	1,989	50.5	1,855	62.4	1,715	74.2	1,563	86.0		
	1,800	2,810	34.0	2,673	48.2	2,541	62.4	2,407	76.5	2,267	90.7	2,115	104.9	3,415	180.8
	2,600	4,282	57.9	4,145	78.4	4,013	98.9	3,879	119.4	3,739	139.8	3,587	160.3		

Performance based on inlet air at standard temperature of 68° F, an ambient pressure of 14.7 psia and 36% relative humidity.
For performance at non-standard conditions, contact your authorized Gardner Denver representative.

70 Series Dimensional Data

MODEL	WEIGHT	PORT SIZE CONN.	SHAFT DIAM.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
7009	740	6" NPT	2.50	32.42	23.62	17.25	5.68	18.00	22.00	12.50	15.00	2.75	15.25	8.25	11.75	17.49	3.50	9.00	11.00	6.25	7.50
7012	850	8" Flange	2.50	35.43	23.62	17.25	5.68	18.00	22.00	15.50	15.00	2.75	15.25	8.25	11.75	18.99	3.50	9.00	11.00	7.75	7.50
7015	940	8" Flange	2.50	38.44	23.62	17.25	5.64	18.00	22.00	18.50	15.00	2.75	15.25	8.25	11.75	20.47	3.50	9.00	11.00	9.25	7.50
7018	990	10" Flange	2.50	41.44	23.62	17.25	5.64	18.00	22.00	21.50	15.00	2.75	15.25	8.25	11.75	21.97	3.50	9.00	11.00	10.75	7.50
7023	1100	12" Flange	2.50	46.44	23.62	17.25	5.62	18.00	22.00	26.50	15.00	2.75	15.25	8.25	11.75	24.47	3.50	9.00	11.00	13.25	7.50
7028	1200	12" Flange	2.50	51.44	23.62	17.25	5.62	18.00	22.00	31.50	15.00	2.75	15.25	8.25	11.75	26.97	3.50	9.00	11.00	15.75	7.50

Weights are in pounds and include shipping cartons or pallets. All dimensions shown in inches. 70 Series Mounting Bolt Hole Diameter = .88 inches.



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